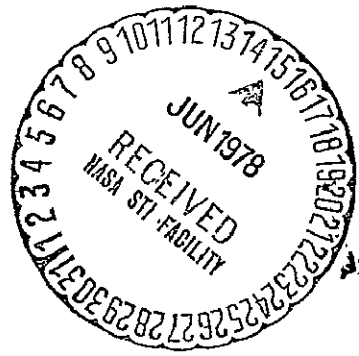
DATA ON CONDUCTING THE SAMEX-76 EXPERIMENT

Academy of Sciences USSR

Translation of "Dannyye o provedenii eksperimenta SAMEKS-76,"
Academy of Sciences USSR, Moscow,
Report, 1978, pp. 1-106 and 114-153



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546 JUNE 1978

STANDARD TITLE PAGE

1. Report No. NASA TM-75107	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Data on Conducting the Samex-76 Experiment		5. Report Date June 1978 6. Performing Organization Code
7. Author(s) Academy of Sciences USSR		8. Performing Organization Report No. 10. Work Unit No.
9. Performing Organization Name and Address Transemantics, Inc. 1901 Pennsylvania Avenue, NW Washington, DC 20006		11. Contract or Grant No. NASW-2792 13. Type of Report and Period Covered Translation
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Washington, DC 20545		14. Sponsoring Agency Code

15. Supplementary Notes

Translation of: "Dannyye o provedenii eksperimenta SAMEKS-76," Academy of Sciences USSR, Moscow, Report, 1978, pp. 1-106 and 114-153.

16. Abstract

This report is about the compilation of data on conducting the SAMEX-76 experiment. This report includes many tables and graphs of the aircraft's flights and its measurements. Also given is the operation time of this equipment and the many observations that have been made by the Scientific Research Ship "Akademik Korolev"

17. Key Words (Selected by Author(s))	18. Distribution Statement
	Unclassified-Unlimited

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22.
Unclassified	Unclassified	172	

DATA ON CONDUCTING THE SAMEX-76 EXPERIMENT

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Table II.I. /1.

Routes and Time Graphs of the Aircraft's Flights (Samexs-76)

No. of the Run	Beginning of the Run (GMT)	End of the Run (GMT)	Course	Distance from the Ship in km or Coordinates of the Turn Points: Start of the Run	Distance from the Ship in km or Coordinates of the Turn Points: End of the Run	Altitude in meters	Remarks
1	2	3	4	5	6	7	8
		Northern Test Site					
		August 26-27, 1976					
		Ship Coordinates: $\varphi = 46^0 12'$ $\lambda = 171^0 21'$					
I	22.30.00	22.37.00	I32	$\varphi = 52^0 40'$, $\lambda = 159^0 20'$	$\lambda' = 159^0 50'$	500	
	22.37.40	22.48.00	92		$\varphi = 52^0 22'$	500	
2	22.49.00	23.00.00	52	$\varphi = 52^0 28'$, $\lambda = 160^0 58'$	$\varphi = 53^0 00'$, $\lambda = 161^0 20'$	500	
3	23.05.00	23.20.00	I80	$\varphi = 53^0 00'$, $\lambda = 161^0 40'$	$\varphi = 52^0 10^0$, $\lambda = 161^0 30'$	2000	
4	23.27.00	23.42.00	I35	$\varphi = 51^0 55'$, $\lambda = 161^0 45'$	$\varphi = 51^0 30'$, $\lambda = 162^0 50'$	2000	
5	23.51.00	0.06.00	295	$\varphi = 51^0 30'$, $\lambda = 162^0 32'$	$\varphi = 51^0 35'$, $\lambda = 161^0 40'$	4000	
6	0.16.00	0.47.00	I35	$\varphi = 51^0 30'$, $\lambda = 162^0 00'$	$\varphi = 50^0 20'$, $\lambda = 164^0 20'$	6000	
7	0.55.00	I.10.00	315	$\varphi = 50^0 15'$, $\lambda = 164^0 10'$	$\varphi = 50^0 55'$, $\lambda = 163^0 10'$	4000	
8	I.17.00	I.32.00	315	$\varphi = 51^0 10'$, $\lambda = 163^0 00'$	$\varphi = 51^0 30'$, $\lambda = 162^0 00'$	2000	
9	I.39.00	I.57.00	315	$\varphi = 51^0 33'$, $\lambda = 161^0 45'$	$\varphi = 52^0 00'$, $\lambda = 161^0 00'$	500	
I0	I.58.00	2.03.00	I35	$\varphi = 52^0 00'$, $\lambda = 161^0 00'$	$\varphi = 51^0 50'$, $\lambda = 161^0 20'$	200	
II	2.06.00	2.26.00	290	$\varphi = 51^0 50'$, $\lambda = 161^0 20'$	$\varphi = 52^0 10'$, $\lambda = 160^0 20'$	500	

1	2	3	4	5	6	7	8

August 30, 1976

Ship Coordinates: $\varphi = 49^0 46'$ $\lambda = 161^0 30'$

I	0.00.I0	0.I0.I0	I0	35	35	6000
2	0.I6.I0	0.26.I0	I90	50	26	6000
3	0.42.I0	0.57.I0	I0	60	5I	5000
4	I.05.00	I.2I.00	I90	62	47	4000
5	I.28.00	I.43.00	I0	50	56	3000
6	I.49.00	2.04.00	I90	62	38	2000
7	2.09.00	2.24.00	I0	45	40	I500
8	2.28.I5	2.43.I5	I90	53	32	I000
9	2.50.00	3.00.00	360	30	28	500
I0	3.06.00	3.I6.00	I90	23	33	500
II	3.23.00	3.33.00	05	33	25	200

September 1, 1976

Ship Coordinates: $\varphi = 49^0 15'$ $\lambda = 162^0 46'$

I	0.44.00	0.54.00	70	45	30	6000
2	0.53.I5	I.08.I5	250	48	30	6000
3	I.I6.30	I.3I.30	70	43	56	5000
4	I.43.00	I.58.00	255	60	42	4000
5	2.03.00	2.I8.00	70	40	60	3000
6	2.24.00	2.39.00	250	80	I9	2000
7	2.48.00	3.03.00	65	48	45	I000
8	3.I0.00	3.30.00	250	70	50	500
9	3.3I.45	3.35.00	330	60		200

1	2	3	4	5	6	7	8

September 3, 1976

Ship Coordinates: $\varphi = 49^0 11'$ $\lambda = 161^0 46'$

I	0.2I.00	0.36.00	I45	50	70	6000
2	0.44.00	0.59.00	320	62	53	5000
3	I.03.30	I.I8.30	I40	52	63	4000
4	I.22.00	I.37.00	320	52	47	3000
5	I.4I.00	I.56.00	I40	60	46	2000
6	I.59.30	2.I4.30	320	42	43	I500
7	2.I9.00	2.34.00	I35	52	33	I000
8	2.39.00	2.54.00	320	4I	45	500
9	2.59.00	3.I4.00	I40	50	39	200
I0	3.I8.00	3.30.00	320	39	30	I000
II	3.36.00	3.46.I5	I40	55	I6	3000
I2	4.0I.00	4.II.00	320	33	37	6000

September 6, 1976

Ship Coordinates: $\varphi = 49^0 04'$ $\lambda = 162^0 15'$

I	0.00.00	0.I5.00	275	65	58	6000
2.	0.2I.00	0.36.00	95	67	53	6000
3.	0.4I.00	0.56.00	275	67	53	6000
4.	I.00.30	I.I5.30	98	60	60	6000
5	I.20.00	I.35.00	275	67	53	6000
6	I.44.00	I.59.00	95	60	46	4000
7	2.03.00	2.I8.00	275	46	50	3000
8	2.23.00	2.38.00	95	65	30	2000
9	2.45.00	3.00.00	275	42	46	I000
I0	3.04.00	3.I9.00	95	55	33	500
II	3.23.30	3.33.30	265	33	52	I50
I2	3.35.00	3.40.00	320	60		350

1	2	3	4	5	6	7	8

September 7-8, 1976

Ship Coordinates: $\varphi = 49^0 04'$ $\lambda = 162^0 04'$

I	23.I9.00	23.34.00	I90	49	56	8000	
2	23.45.00	0.00.00	I0	50	65	6000	
3	0.I0.00	0.25.00	I90	57	45	6000	
4	0.30.30	0.45.30	I0	48	77	6000	
5	0.53.00	I.08.00	I90	69	36	6000	
6	I.I5.00	I.30.00	I0	57	63	4000	
7	I.36.00	I.5I.00	I90	62	36	4000	
8	I.57.30	2.I2.30	I0	36	56	3000	
9	2.20.00	2.35.00	I90	65	23	2000	
I0	2.40.00	2.55.00	I0	40	48	I000	
II	3.03.00	3.I8.00	I90	52	36	550	
I2	4.23.00	4.38.00	I0	30	56	I50	

September 9-10, 1976

Ship Coordinates: $\varphi = 49^0 43'$ $\lambda = 161^0 48'$

I	23.43.00	0.00.00	20	40	65	6000	
2	0.I0.00	0.25.00	200	70	45	6000	
3	0.35.30	0.5I.30	20	40	70	6000	
4	I.04.00	I.I9.00	200	64	5I	6000	
5	I.28.00	I.43.00	20	45	67	6000	
6	I.54.00	2.09.00	200	65	33	4000	
7	2.I4.45	2.29.45	20	42	64	3000	
8	2.37.30	2.52.30	200	60	30	2000	
9	2.57.00	3.I2.00	20	40	45	I000	
I0	3.I6.00	3.3I.00	200	60	28	500	
II	3.35.30	3.50.30	I0	30	56	200	

1	2	3	4	5	6	7	8
			September 10-11, 1976				
		Ship Coordinates:		$\varphi = 49^0 50'$	$\lambda = 162^0 03'$		
I	22.45.00	23.22.00	140	from the shore to 110 km from the ship		4000	
2	23.22.00	23.36.00	175	110 km from the ship to the flight run		4000	
3	Revolving to the left $\gamma = 15^0$		270	Distance removed from the rotation center:		4000	
	23.43.10	23.47.22		12 km to the left of the ship			
	23.47.22	23.51.35		5 km "			
	23.51.35	23.56.00		2 km to the right of the ship			
	23.56.00	00.00.30		9 km "			
	0.00.00	0.04.34		16 km to the right of the ship			
4	0.05.00	0.08.30	260	with S = 30 km to the ship			
5	Revolving to the left $\gamma = 30^o$		270	Distance removed from the rotation center of the ship:		4000	
	0.11.25	0.14.08		2 km to the left			
	0.14.08	0.16.47		2 km to the right			
6.	0.18.00	0.20.30		with S = 30 km to the ship			
	0.21.30	0.22.30		8 km from the ship			
7.	Revolving to the left $\gamma = 30^o$		270	Distance removed from the rotation center of the ship:		4000	
	0.22.51	0.25.35		2 km to the left			
	0.25.35	0.28.23		2 km to the right			
8.	0.42.00	0.52.00	70	32	45	4000	
9.	1.00.00	1.10.00	250	39	20		
10.	1.22.00	1.32.00	70	35	50	6000	
11.	1.46.00	2.01.00	250	40	50	6000	
12.	2.17.30	2.27.30	70	43	53	6000	
13.	3.13.15	3.23.15	250/270	31	25	500	
14	3.37.00	4.15.00	320	100 km from the ship	60 km from the shore	4000	
			September 12-13, 1976				
		Ship Coordinates:		$\varphi = 50^o 18'$	$\lambda = 166^o 00'$		
1	23.37.00	0.01.00		20 km from the shore		4000	
2	0.02.00	1.05.00				4000	
3	Revolving to the left $\gamma = 15^o$		360	Rotation center:		4000	

1	2	3	4	5	6	7	8
	1.06.05	1.10.12		Above the ship			
	1.10.12	1.14.50		3 km to the east			
	1.14.50	1.19.30		6 km to the east			
	Revolving to the left $\gamma = 15^{\circ}$		270				
	1.29.04	1.32.22		above the ship			
	1.33.22	1.37.49		3 km to the east			
4	1.39.00	1.41.00	330	12 km to the ship		4000	
5	Revolving to the left $\gamma = 30^{\circ}$		270				
	1.54.24	1.43.45		2 km to the west			
	1.43.45	1.46.02		above the ship			
6	Revolving to the left $\gamma = 30^{\circ}$		360				
	1.54.24	1.57.00		above the ship			
	1.57.00	1.59.25		2 km to the east			
7	2.23.00	2.23.00	10	36	16	400	
8	2.42.00	2.52.00	190	36	30	400	
9	3.16.00	3.26.00	190	31	45	2000	
10	3.40.00	3.50.00	10	42	20	4000	
11	3.57.00	5.34.00	190	30	56	6000	
12	4.15.00	5.34.00	310	110 km from the ship		4000	

Southern Test Site

October 13, 1976

Ship Coordinates: $\varphi = 43^{\circ}28'$ $\lambda = 151^{\circ}08'$

I	0.35.00	0.50.00	I60	$\varphi = 42^{\circ}45'$, $\lambda = 151^{\circ}43'$	$\varphi = 42^{\circ}07'$, $\lambda = 152^{\circ}30'$	6000
2	0.54.00	I.09.00	340	$\varphi = 42^{\circ}17'$, $\lambda = 153^{\circ}05'$	$\varphi = 43^{\circ}02'$, $\lambda = 152^{\circ}10'$	6000
3	I.I0.00	I.25.00	340	$\varphi = 43^{\circ}02'$, $\lambda = 152^{\circ}10'$	$\varphi = 43^{\circ}50'$, $\lambda = 151^{\circ}12'$	6000
4	I.28.00	I.43.00	I60	$\varphi = 43^{\circ}40'$, $\lambda = 149^{\circ}55'$	$\varphi = 42^{\circ}55'$, $\lambda = 149^{\circ}50'$	6000
5	I.57.00	2.I2.00	0	$\varphi = 43^{\circ}20'$, $\lambda = 151^{\circ}10'$	$\varphi = 44^{\circ}10'$, $\lambda = 151^{\circ}00'$	3000

1	2	3	4	5	6	7	8
6	2.20.30	2.35.30	I80	φ= 43°30', λ= I50°50'	φ= 42°55', λ= I50°50'	I000	
7	2.39.00	2.54.00	340	φ= 42°56', λ= I5I°I0'	φ= 43°35', λ= I50°40'	500	
8	2.58.I5	3.I3.I5	290	φ= 43°35', λ= I50°40'	φ= 44°I0', λ= I49°50'	200	

October 19, 1976

Ship Coordinates: φ = 44°17' λ = 149°05'

I	0.I7.00	0.32.00	200	70	40	6000
2	0.38.00	0.53.00	20	53	62	6000
3	0.59.00	I.I4.00	200	64	36	6000
4	I.I9.45	I.34.45	20	29	73	6000
5	I.44.00	I.59.00	200	57	40	4000
6	2.04.00	2.I9.00	20	72	32	4000
7	2.25.00	2.40.00	200	62	26	3000
8	2.45.30	3.00.30	30	20	60	2000
9	3.I0.00	3.25.00	200	4I	42	I000
I0	3.28.30	3.43.30	20	4I	46	530
II	3.48.00	4.03.00	200	55	28	200

October 24, 1976

Ship Coordinates: φ = 44°07' λ = 149°44'

I	4.16.00		140	to the ship		4000
2	Revolving to the left γ= 15°		280	ship in the center		
	5.05.00	5.10.20				
	5.10.20	5.15.25				
	5.21.05	5.25.30	90	ship in the center		
	5.25.30	5.30.25		of rotation		
3	Revolving to the left γ = 30°		30			
	5.34.22	5.36.45	)			
	5.36.45	5.39.15	)			
	5.39.15	5.41.50	10)	rotation center 44°15'/149°55'		
	5.41.50	5.44.15	)			
	5.44.15	5.46.41	)			
	5.59.00	6.14.00	215	30	58	200

1	2	3	4	5	6	7	8
5	6.19.00	6.34.00	30	30	60	1000	
6	6.48.05	7.10.00				5500	

October 25, 1976

Ship Coordinates: $\varphi = 44^{\circ}14'$ $\lambda = 148^{\circ}46'$

I	2.50.00		I35			7I00
2	2.55.00		I75			7I00
3	3.39.00	3.54.00	265	30	82	7300
4	3.57.30	4.I2.30	90	80	60	7300
5	4.I6.00	4.3I.00	265	30	80	7300
6	4.38.00	4.53.00	90	75	65	8200
7	4.58.00	5.I3.00	265/245	70	45	8200
8	5.27.00	5.42.00	320	$\varphi = 43^{\circ}37'$, $\lambda = I48^{\circ}30'$	$\varphi = 44^{\circ}30'$, $\lambda = I47^{\circ}40'$	5000
9	5.44.30	5.59.30	I40	Average distance from the ship 60 km		5000
I0	6.I5.I5	6.30.I5	320	$\varphi = 43^{\circ}54'$, $\lambda = I48^{\circ}I2'$	$\varphi = 44^{\circ}30'$, $\lambda = I47^{\circ}40'$	350

October 26, 1976

Ship Coordinates $\varphi = 44^{\circ}00'$ $\lambda = 149^{\circ}36'$

I	2.35.00	3.05.00	I50		$\varphi = 43^{\circ}30'$, $\lambda = I50^{\circ}00'$	6000
2	3.I9.00	3.34.00	270	$\varphi = 43^{\circ}46'$, $\lambda = I50^{\circ}08'$	$\varphi = 43^{\circ}40'$, $\lambda = I48^{\circ}58'$	6000
3	3.4I.30	3.56.30	90	40	I00	6000
4	4.06.00	4.2I.00	270	87	I0	4000
5	4.22.00	4.37.00	265	from the ship to S = 77 km		4000
6	4.40.30	4.50.30	90	58	I8	4000

Revolving to the left

$\gamma = I5^{\circ}$ 275

5.00.45	5.05.30	
5.05.30	5.I0.00	
5.I3.30	5.I8.00	275
5.I8.00	5.22.30	

above the ship 4000

1	2	3	4	5	6	7	8

Revolving to the left

$\gamma = 30^{\circ}$

	5.26.30	5.28.35	270				
	5.28.35	5.30.45			above the ship		4000
	5.30.45	5.33.00					
	5.33.00	5.35.15					
	5.35.15	5.37.30					
7	6.01.00	6.16.00	270	42		35	900

October 28, 1976

Ship Coordinates: $\varphi = 42^{\circ}56'$ $\lambda = 148^{\circ}10'$

I	2.22.30	2.37.30	80	36	94	6000
2	2.53.00	3.08.00	260	55	25	6000
3	3.21.00	3.36.00	180	60	55	6000
4	3.44.15	3.59.15	360	46	58	4000
5	4.04.00	4.19.00	180	70	34	4000
6	4.25.00	4.40.00	360	50	44	3000
7	4.45.00	5.00.00	180	60	30	2000
8	5.04.30	5.19.00	355	32	43	1000

October 29, 1976

Ship Coordinates: $\varphi = 42^{\circ}49'$ $\lambda = 148^{\circ}08'$

I	2.20.00	2.47.00	180			6000
2	2.53.00	3.08.00	110	16	94	6000
3	3.18.00	3.32.00	290	68	42	6000
4	3.40.30	3.55.30	110	39	61	4000
5	4.23.00	4.33.00	240	110	50	4000

Revolving to the left

$\gamma = 28^{\circ}$

4.36.00	4.39.00	210	above the ship
4.39.00	4.41.50	210	center shifted 7 km to the east
4.42.55	4.45.50	280	above the ship
4.45.50	4.48.50	280	center shifted 7 km to the east
4.48.50	4.51.45	280	center shifted 14 km to the east of the ship

1	2	3	4	5	6	7	8
	Revolving to the left $\gamma = 15^{0}$						
	4.52.05	4.57.25	250	center shifted 15 km to the east			
	4.57.25	5.02.45	250	center shifted 7 km to the east			
6	5.08.30	5.32.00	360				6000

October 30, 1976

	Ship Coordinates:			$\varphi = 42^{0}49'$	$\lambda = 148^{0}08'$	
I	2.20.00	2.43.00	175		65	6000
2	2.44.30	2.59.00	80	65	45	6000
3	3.03.00	3.19.00	250	50	50	6000
4	3.27.00	3.42.00	70	54	56	4000
5	3.57.00	4.12.00	250	55	28	4000
	Revolving to the left $\gamma = 15^{0}$					
6	4.17.15	4.22.00	60	above the ship		
	4.22.00	4.26.30		5 km to the east		
7	4.31.62	4.36.45	260	above the ship		
	4.36.15	4.40.38		5 km to the east		
	Revolving to the left $\gamma = 28^{0}$					
8	4.44.20	4.46.50	270	12 km to the west		
	4.46.50	4.49.10		6 km to the west		
	4.49.40	4.52.10	260	above the ship		
	4.52.10	4.55.50		6 km to the east		
	4.55.50	4.57.40		12 km to the east		
9	5.10.30	5.25.30	70	40	50	500
10	5.39.00	6.16.00	340			6000

Table II-2

Time of Operation of the Scientific Equipment (GMT)

Date	Hours of operation (GMT)	Microwave Radiometers λ = 0.8 cm	λ = 1.35 cm	λ = 1.6 cm	λ = 3.0 cm	λ = 2.4 cm	λ = 8.5 cm	Infrared radiometer	Thermohygrometer	Gage of the water content of the clouds	Aerial photo equipment	Variations of the flight program
1	2	3	4	5	6	7	8	9	10	11	12	13
					Northern Test Site							
August 26-27	22.30.00	+	−	+		−	−	+	+	+	+	A,B
	2.26.00	"	"	"				"	"	"	"	
August 30	0.00.10	+	+	+	−	−	+	+	+	+	+	A,B
	3.33.00	"	"	"			"	"	"	"	"	
Sept. 1	0.44.00	−	+	+	+	−	+	+	+	+	+	A,B
	3.35.00		"	"	"		"	"	"	"		
Sept. 3	0.21.00											
	4.11.00	+	+	+	+	−	+	+	+	+	+	A
Sept. 6	0.00.00	"	"	"	"		"	"	"	"	"	
	3.40.00	−	+	+	+	−	+	+	+	+	+	A
Sept. 7-8	23.10.00		"	"	"		"	"	"	"	"	
	4.38.00	−	+	+	+	−	+	+	+	+	+	A,B
Sept. 9-10	23.45.00		"	"	"		"	"	"	"	"	
	3.50.30	+	+	+	+	−	+	+	+	+	+	A,B
Sept. 10-11	22.45.00	"	"	"	"		"	"	"	"	"	
	4.15.00	+	+	+	+	−	+	+	+	+	+	C
Sept. 12-13	23.37.00	"	"	"	"		"	"	"	"	"	
	5.34.00	+	+	+	+	−	+	+	+	+	+	C
					Southern Test Site							
Oct. 13	0.35.00											
	3.13.15	+	+	+	+	+	+	+	+	−	+	A
Oct. 19	0.17.00											
	4.03.00	+	+	+	+	+	+	+	+	+	+	A,B
Oct. 24	4.16.00											
	7.10.00	+	+	+	+	+	+	+	+	+	+	B,C
Oct. 25	2.50.00											
	6.30.15	+	+	+	+	+	+	+	+	+	+	A,B
Oct. 26	2.35.00											
	6.16.00	+	+	+	+	+	+	+	+	+	+	C
Oct. 28	2.22.30											
	5.19.00	+	+	+	+	+	+	+	+	+	+	A,B
Oct. 29	2.20.00											
	5.32.00	+	+	+	+	+	+	+	+	−	+	C
Oct. 30	2.20.00											
	6.16.00	+	+	+	+	+	+	+	+	−	+	C

Table of Observations from the Scientific Research Craft "AkademicKorolev" (GMT)

/10.

Число [1]	Время работы [2] самолёт [3]	корабль [4]	Микроволновая радиометрия [5] 0.8см	I,35 см	I,6 см	3,2 см	8,5 см	метеорологический комплекс [6]	радиозондирование [7]	гидрология [8]	волнография измерения [9]	измерения проекций углонов морской поверхности [10]	ИК-радиометрия [11]	Фотосъемка состояния поверхности океана [12]
26-27/VIII	22.30.00-02.26.00	22.55-00.06	+	+	+	-	+	+	+	+	+	+	+	+
29-30/VIII	00.00.I0-03.33.00	2I.56-02.40	+	+	+	-	+	+	+	+	+	+	+	+
3I/VIII-I/IX	00.44.00-03.35.00	22.55-03.25	+	+	+	-	+	+	+	+	+	+	+	+
2-3/IX	00.2I.00-04.II.00	23.05-02.40	+	+	+	-	+	+	+	+	+	+	+	+
6/IX	00.00.00-03.40.00	00.00-03.42	+	+	-	+	+	+	+	+	+	+	+	+
7-8/IX	23.I0.00-04.38.00	00.II-03.03	+	+	-	+	+	+	+	+	+	+	+	+
9-I0/IX	23.45.00-03.50.30	00.08-04.50	+	+	+	+	+	+	+	+	+	+	+	+
I0-II/IX	22.45.00-04.I5.00	22.07-02.23	+	+	+	+	+	+	+	+	+	+	+	+
I2-I3/IX	23.37.00-05.34.00	23.59-06.5I	+	+	+	+	+	+	+	+	+	+	+	+
I2-I3/X	00.35.00-03.I3.I5	23.59-03.50	+	+	-	+	+	+	+	+	+	+	+	+
I9/X	00.I7.00-04.03.00	00.04-02.55	+	+	+	+	+	+	+	+	+	+	+	+
24/X	04.I6.00-07.I0.00	02.00-05.0I	+	+	+	+	+	+	+	+	+	+	+	+
25/X	02.50.00-06.30.I5	02.I6-04.36	+	+	+	+	+	+	+	+	+	+	+	+
26/X	02.35.00-06.I6.00	02.05-04.42	+	+	+	+	+	+	+	+	+	+	+	+
28/X	02.22.30-05.I9.00	0I.47-03.47	+	+	+	+	+	+	+	+	+	+	+	+
29/X	02.20.00-05.32.00	0I.53-03.40	+	+	+	+	+	+	+	+	+	+	+	+
30/X	02.20.00-06.I6.00	02.I8-05.50	+	+	+	+	+	+	+	+	+	+	+	+

Key: 1 - date; 2 - time of operation; 3 - aircraft; 4 - ship; 5 - microwave radiometer; 6 - meteorological complex; 7 - radio sounding; 8 - hydrology; 9 - wave recordings; 10 - measuring the slope projections of the marine surface; 11- infra-red radiometry; 12 - photographing the state of the ocean's surface

The dates are as follows: 8/26-27; 8/29-30; 8/31; 9/1; 9/2-3; 9/2-6; 9/7-8; 9/9-10; 9/10-11; 9/12-13; 10/12-13; 10/19; 10/24; 10/25; 10/26; 10/28; 10/29; 10/30.

Table II-4 Weather Conditions in the Region of the Craft /11.

Key:
1. Date
2. Purpose
3. H-(m) of the wind and waves
4. H-(m) of the swell
5. water temperature °C
6. air temperature °C
7. cloudiness 8. precipitation 9. actual wind 10. total amount
11. form 12. type 13. time 14. direction (degrees) 15. speed m/sec
16. August 26-27 Measuring the temperature of the sea surface
17. August 30 Measuring the content of water vapor
18. September 1 " " " " " "
19. September 3 " " " " " "
20. September 6 Measuring the water reserve in the clouds and the content of water vapor
21. September 7-8 - " -
22. September 9-10 Measuring the water reserve in the clouds and the intensity of liquid precipitation
23. September 10-11 Swell and foam on the sea surface
24. September 12-13 - " -
25. October 13 Measuring the temperature of the sea surface, content of water vapor
26. October 19 Measuring the water reserve of the clouds and the intensity of liquid precipitation
27. October 24 Measuring the swell, foam on the sea surface, intensity of liquid precipitation
28. October 25 Measuring the water reserve of the clouds, intensity of liquid precipitation
29. October 26 Measuring the swell, foam on the sea surface
30. October 28 Measuring the water vapor content
31. October 29 Measuring the swell, foam on the sea surface
32. October 30 -"-
33. northern test site (9 flights)
34. southern test site (8 flights)

	Дата 1	Цель 2	H(м) ветр. волн. 3	H(м) зыби 4	T воды °C 5	T возд. °C 6	Облачность 7 Общее колич. 10	Форма 11	Осадки 8 Вид 12	Время 13	Истинный ветер 9 Напр. (град.) 14	Скорость м/сек 15
		33 Северный полигон (9 полётов)										
16	26–27 августа	Измерение температуры поверхности моря	8.0	I.5	9.5	9.9	9	+	≡	22^{30}–$0I^{00}$	250	4.0
17	30 августа	Измерения содержания водяного пара	0.5	I.5	9.0	9.4	8	Sc op	≡	$0I^{06}$–$0I^{28}$	330	3.0
18	I сентября	–"– –"– –"– –"–	I.5	2.0	I0.3	I0.2	7	Sc, St, Cu			250	8.0
19	3 сентября	–"– –"– –"– –"–	0.5	2.0	9.9	8.4	8	Sc, St			I30	4.0
20	6 сентября	Измерения водозапаса облачности, содержания водяного пара	I,0	I,5	I0.I	9,0	8	Sc, St neb			240	5.0
21	7–8 сентября	–"–	I.0	I.0	I0.I	9.3	8	Sc, St, Cb, Ac	∴	00^{25}–$0I^{I5}$	200	6.0
22	9–I0 сентября	Измерения водозапаса облачности, интенсивности жидких осадков	3.5		I0.3	II.2	9	St neb	≡	$2I^{0I}$–03^{45}	2I0	I3.0
23	I0–II сентября	Волнение, пена на поверхности моря	3.5		II.2	II.6	6	Ac, Ci			250	I2.0
24	I2–I3 сентября	–"–	5.5		6.9	7.3	8	Cu, St, Ns	•	23^{45}–00^{00}	0I0	20.0
		34 Южный полигон (8 полётов)										
25	I3 октября	Измерения температуры поверхности моря, содержания водяного пара	I.5	2.0	6.9	8.0	7	St, Sc, Ac, As			200	7.0
26	I9 октября	Измерения водозапаса облачности, интенсивности жидких осадков	I.0	I.5	8.9	I0.0	4	St neb	≡	$0I^{I5}$–04^{00}	I70	6.0
27	24 октября	Измерения волнения, пены на поверхности моря, интенсивности жидких осадков	I.0	0.0	9.3	7.9	7	Ac, As			I00	4.0
28	25 октября	Измерения водозапаса облаков, интенсивности жидких осадков	I.0	2.0	7.4	I0.0	8	Ns, Fr nb	•	02^{50}–06^{30}	2I0	5.0
29	26 октября	Измерения волнения, пены на поверхности моря	3.0		8.0	6.6	6	Cu, Ac			280	II.0
30	28 октября	Измерения содержания водяного пара	I.5	2.5	I2.3	8.8	5	Cu, Ac, Ci			240	7.0
31	29 октября	Измерения волнения, пены на поверхности моря	I.5	4.5	II.0	I0.9	8	Cu, Ac			I30	9.0
32	30 октября	–"– –"–	3.5	4.0	6.6	7.0	6	Cu, Ac			270	I6.0

IV. Days of Operation Suggested by the Soviet Side for Analysis and Comparison /12.

1. September 9-20, 1976 (northern testing site)
2. September 10-11, 1976 (northern testing site)
3. September 12-13, 1976 (northern testing site)
4. October 13, 1976 (southern testing site)
5. October 25, 1976 (southern testing site)
6. October 30, 1976 (southern testing site)

III-1. Data on the Aircraft Measurements /13.

TABLES

of the Radio Brightness Temperature, Averaged over 10-second Intervals (Manual Processing)

Radiometer λ = 2.4 cm

October 13, 1976

Command No.	Time (Moscow)	T_aK
1	2	3
I	3-35	II6
		II8
		II6
		II8
	3-37	I23
		I20
		II7
		I20
		I20
		II8
		II8
		II8
	3-38	II9
		II9
		II8
		II8
		I20
		II9
		II9
	3-39	I20
		II8
		II9
		II9
		I20
		II8
		II9
	3-40	II7
		II7
		II9
		II8
		II8
		II7

Command No.	Time (Moscow)	T_aK
1	2	3
	3-40	II8
		II9
	3-4I	II8
		II8
	3-44	I26
	3-45	I26
		I24
		I24
		I25
		I25
		I26
		I24
	3-46	I26
		I25
		I25
		I25
		I24
		I24
		I24
	3-47	I26
		I26
		I27
		I25
		I28
		I30
		I29
		I3I
	3-48	I30
		I29
		I27
		I26
		I28

Command No.	Time (Moscow)	T_aK
1	2	3
I	3-48	I27
		I29
	3-49	I27
		I28
I		I30
2	3-54	I25
		I24
		I25
		I26
		I30
		I25
		I29
	3-55	I28
		I27
		I27
		I29
		I32
		I30
	3-56	I28
		I26
		I24
		I25
		I23
		I22
	3-57	I2I
		I22
		I2I
		I2I
		I2I
		I20
		I23

Command No.	Time (Moscow)	T_aK
1	2	3
2	3-58	I22
		I2I
		I2I
		I2I
		I20
		I20
	3-59	I2I
		II8
		II9
		I20
		II8
		I20
	4-00	II8
		II8
		I20
		II9
		II8
		II9
		I20
	4-0I	II9
		I20
		II8
		I20
		I20
		I20
	4-02	I20
		I20
		I20
		I20
		I20
		I2I

1	2	3
2	4-03	I20
		I2I
		II9
		I2I
		I20
		I20
		II9
		II8
		I20
	4-04	II9
		II8
		II8
		I2I
		I20
		II9
		II9
	4-05	I20
		II8
		II9
		II8
		II8
		II9
		I20
		I20
	4-06	I20
		I20
		II9
		I22
		I20
		II8
		II9
	4-07	II7
		II9
		I20
		I20
		II9

1	2	3
	4-07	II8
		II8
	4-08	II9
		II9
		II9
		I22
		I2I
		II7
		I2I
		II8
	4-09	I2I
2		I20
3	4-I0	I24
		I25
		I24
	4-II	I25
		I26
	4-I3	I22
		I24
		I24
		I22
		I25
		I24
	4-I4	I25
		I2I
		I25
		I25
		I25
		I24
		I24
	4-I5	I24
		I25
		I24
		I24
		I23
		I25
		I24

1	2	3
3	4-I6	I23
		I25
		I24
		I26
	4-I8	II2
		II4
		II4
		II3
	4-20	II3
		II2
		II0
		III
	4-2I	III
		II3
		II0
		II0
		I09
		III
		II0
		I09
	4-22	I09
		II2
		I09
		I08
		I09
		II0
		I09
	4-23	III
		I09
		II0
		II2
		I09
		II0
		III
	4-24	II0
		III
		I08

1	2	3
3	4-24	I09
		I08
		II0
4	4-28	II3
		II3
		III
		II4
		II3
		II3
		II3
	4-29	II4
		III
		II2
		II3
		II4
		II6
		II5
	4-30	II4
		II3
		II5
		II4
		II3
		II5
		II4
	4-3I	II4
		II5
		II3
		II4
		II3
		II5
		II4
	4-32	II5
		II4
		II4
		II4
		II3
		II5

I	2	3
4	4-33	II4
		II4
		II5
		II4
		II4
		II5
		II4
		II4
		II4
		II3
		II4
		II4
		II4
		II4
		II5
	4-35	II4
		II5
		II5
		II4
		II5
		II5
	4-36	II4
		II4
		II5
		II4
		II6
		II4
		II4
	4-37	II5
		II4
		II6
		II7
		II5
		II4
		II6
		II5
	4-38	II5
		II6

4	5	6
4	4-38	II7
		II7
		II6
		II4
		II5
		II6
		II7
		II6
		II6
		II7
		II5
		II4
		II5
		II4
	4-40	II6
		II8
		II6
		II5
		II5
		II5
		II6
		II5
	4-4I	II5
		II6
		II5
		II6
		II5
		II6
		II6
		II5
	4-42	II5
		II7
		II6
		II6
		II6
		II5
		II5
		II5
		II5

I	2	3
5	5-00	II9
		II6
		II7
	5-0I	II7
		II6
		II8
		II8
		II6
		II5
	5-02	II7
		II6
		II7
		II6
		II7
		II6
		II8
		II7
		II5
	5-03	II6
		II5
		II7
		II8
		II7
		II7
		II6
		II7
	5-04	II6
		II7
		II7
		II9
		II9
		II8
		II7
		II9

I	2	3
5	5-05	II7
		II6
		II8
		II6
		II9
		II7
		II8
		II6
		II5
		II9
		II9
		II8
		II9
		II8
	5-07	II9
		II9
		II9
		II7
		II8
		II7
		II9
		II7
	5-08	II9
		II8
		II7
		II9
		II9
		II7
		II8
		II8
	5-09	II9
		II9
		II8
		II9
		II8
		II9

1	2	3
5	5-10	II9
		II8
		II9
		II9
		II8
		II8
		II9
		II8
	5-11	II9
		II8
		II9
		II9
		II9
		II8
5		II9
6	5-20	I20
		II9
		I20
		I20
		II9
		II8
		II9
		I2I
	5-2I	II8
		II8
		II9
		I20
		I20
		I2I
		I20
	5-22	I2I
		I20
		I2I
		I20
		I20
		I2I

1	2	3
6	5-22	I22
	5-23	I2I
		I2I
		I2I
		I2I
		I22
		I22
		I2I
	5-24	I22
		I23
		I23
		I22
		I22
		I23
		I25
	5-25	I24
		I25
		I22
		I23
		I2I
		I23
		I23
	5-26	I23
		I25
		I23
		I23
		I25
		I24
		I24
	5-27	I23
		I25
		I25
		I25
		I25
		I26
		I24

1	2	3
6	5-28	I25
		I25
		I25
		I26
		I24
		I26
		I26
	5-29	I27
		I26
		I26
		I26
		I27
		I26
		I27
	5-30	I26
		I27
		I28
		I26
		I27
		I26
		I26
	5-3I	I26
		I27
		I27
		I26
		I27
		I26
		I27
	5-32	I27
		I27
		I28
		I28
		I27
		I28
		I27

1	2	3
6	5-33	I28
		I27
		I28
		I27
		I28
	5-34	I27
		I29
		I28
		I28
		I27
		I27
		I29
		I28
6		I28
7	5-40	I28
		I27
		I27
		I28
		I29
		I27
		I28
		I28
	5-4I	I28
		I29
		I29
		I29
		I29
		I3I
		I30
		I30
	5-42	I30
		I29
		I29
		I30
		I29
		I29
		I30

1	2	3
7	5-43	I30
		I29
		I30
		I30
		I29
		I29
		I30
		I3I
	5-44	I29
		I29
		I29
		I29
		I30
		I29
		I29
	5-45	I30
		I28
		I28
		I29
		I29
		I28
		I28
		I30
	5-46	I29
		I28
		I3I
		I32
		I3I
		I3I
		I3I
	5-48	I34
		I32
	5-49	I32
		I32
		I33

1	2	3
7	5-49	I32
		I32
		I33
		I3I
	5-50	I32
		I33
		I32
		I3I
		I32
		I3I
		I33
	5-5I	I32
		I3I
		I32
		I3I
		I33
		I33
		I3I
		I33
	5-52	I33
		I3I
		I32
		I33
		I33
		I3I
	5-53	I33
		I33
		I33
		I33
		I33
		I33
		I33
		I33

October 25, 1976

Command No.	Time (ms)	T_aK
I	5-55	I32
		I34
		I34
		I34
	5-56	I34
		I36
		I36
		I35
	5-57	I35
		I36
		I35
		I37
		I35
	5-58	I37
		I33
		I37
		I38
		I39
		I37
	5-59	I37
		I35
	6-00	I36
		I36
	6-0I	I34
		I36
		I33
		I37
		I40
		I38
	6-02	I36
		I37
		I37

Command No.	Time (ms)	T_aK
I	6-02	I34
		I34
	6-03	I36
		I34
		I34
		I36
	6-04	I39
		I37
		I37
	6-05	I35
		I35
		I35
	6-07	I32
	6-08	I34
		I35
		I3I
		I35
		I35
	6-39	I33
		I33
		I33
		I3I
	6-40	I33
		I3I
		I33
		I33
		I33
	6-4I	I35
		I38
		I36
		I35
		I37

Command No.	Time (ms)	T_aK
2	6-42	I35
		I33
		I3I
		I35
		I33
		I32
		I32
	6-43	I33
		I30
		I30
		I28
		I27
	6-44	I26
		I25
		I27
		I25
	6-45	I26
		I24
		I24
		I26
		I24
	6-46	I24
		I25
		I24
		I24
		I24
	6-47	I25
		I27
		I25
		I25
		I23
	6-48	I22
		I22

Command No.	Time (ms)	T_aK
2	6-48	I23
		I23
	6-49	I22
		I22
		II9
		II6
		I22
	6-50	I2I
		I22
		I22
		I2I
		I23
		I24
	6-5I	I27
		I28
		I25
		I25
		I25
	6-52	I24
		I22
		I23
		I22
		I23
		I24
	6-53	I23
		I24
		I24
		I25
		I23
2		I23
3	6-57	I28
		I26
		I27
		I25
		I23
		I26

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		I25
	6-59	I27
		I26
		I24
		I22
	7-00	I24
		I22
		I24
		I27
		I23
	7-0I	I25
	7-02	I25
		I27
		I25
		I26
	7-03	I27
		I25
		I27
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		I26
	7-04	I25
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		I27
		I29
		I3I
		I30
		I32
	7-05	I32
		I32
		I35
		I32
	7-06	I33
		I35
		I36

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		I35
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		I34
	7-08	I3I
		I3I
		I28
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		I3I
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		I25
	7-II	I29
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4	7-I6	I30
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	7-20	I3I
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	7-2I	I3I
		I34
		I35
		I35
		I3I
		I34
	7-22	I34
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		I3I
		I35
	7-23	I32
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	7-24	I32
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		I3I
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		I3I
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	7-4I	I37
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		I3I
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October 30, 1976

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	7-45	I02
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		I0I
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		I03
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	7-5I	I02
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	8-4I	I24
		I23
		I24
		I23
		I24
	8-42	I24
		I26
		I25
		I25
		I24

I	2	3
I0	8-43	I24
		I25
		I23
		I24
		I22
		I23
	8-44	I24
		I25
		I24
		I25
	8-45	I25
		I25
		I23
		I24
		I22
	8-46	I24
		I23
		I24
		I23
		I24
	8-47	I23
		I24
		I23
		I23
		I24
	8-48	I24
		I23
		I24
		I24
		I22
	8-49	I24
		I23
		I25
		I23
		I25
	8-50	I24
		I25
		I24
		I24
		I23
		I25

I	2	3
I0	8-5I	I23
		I25
		I24
		I24
		I23
	8-52	I24
		I24
		I25
		I23
	8-53	I24
		I23
		I22
		I23
		I22
	8-54	I2I
		I2I
		I23
		I22
		I22
		I23
	8-55	I24
		I23
		I22
		I2I
		I22
	8-56	I23
		I2I
		I2I
		I22
		I23
	8-57	I28
		I24
		I25
		I24
	8-58	I23
		I23
		I22
		I2I
		I2I

I	2	3
I0	8-59	I22
		I2I
		I22
		I2I
		I22
	9-00	I22
		I23
		I22
		I23
		I24
	9-0I	I22
		I23
		I2I
		I22
		I20
	9-02	I2I
		I20
		I2I
		I22
		I23
	9-03	I24
		I2I
		I23
		I22
		I23
	9-04	I23
		I25
		I26
		I28
		I26
	9-05	I25
		I25
		I26
		I25
		I26
	9-06	I24
		I26
		I25
		I26
		I28

I	2	3
I0	9-07	I26
		I26
		I24
		I25
		I26
	9-08	I24
		I25
		I24
		I24
		I24
	9-09	I24
		I24
		I24
		I24
		I24
	9-I0	I26
		I24
		I25
		I26
		I25
	9-II	I27
		I27
		I25
		I27
		I29
	9-I2	I27
		I28
		I27
		I25
		I27
	9-I3	I27
		I28
		I28
		I3I
		I32
	9-I4	I34
		I34
		I35
		I36
		I35
		I37

September 10, 1976

Time (Moscow)	Altitude (m)	Radiation Temperature (°C)	Time (Moscow)	Altitude (m)	Radiation Temperature (°C)
1	2	3	1	2	3
2 48'00"	6000	I.2	2 55'30"	6000	7.I
2 48 I5		I.8	2 55 45		9.2
2 48 30		3.I	2 56 00		8.6
2 48 45		4.3	2 56 I5		8.9
2 49 00		4.3	2 56 30		8.6
2 49 I5		4.0	2 56 45		I0.I
2 49 30		0.6	2 57 00		9.5
2 49 45		5.0	2 57 I5		7.I
2 50 00		5.0	2 57 30		-6.2
2 50 I5		5.0	2 58 00		8.3
2 50 30		4.I	2 58 30		6.8
2 50 45		6.2	2 58 45		9.5
2 5I 00		4.4	2 59 00		9.8
2 5I I5		5.0	2 59 I5		9.8
2 5I 30		5.3	2 59 45		9.8
2 5I 45		5.0	3 00 00		II.0
2 52 00		5.9	4 29 00		6.7
2 52 I5		6.2	4 29 I5		7.5
2 52 30		5.8	4 29 30		8.8
2 52 45		5.0	4 29 45		8.4
2 53 00		4.7	4 30 00		8.0
2 53 I5		4.4	4 30 I5		7.I
2 53 30		-2.6	4 30 30		8.4
2 53 45		3.4	4 30 45		8.0
2 54 00		I.4	4 3I 00		6.7
2 54 I5		-0.8	4 3I I5		6.3
2 54 30		2.3	4 3I 30		6.7
2 54 45		4.I	4 3I 45		9.6
2 55 00		3.2	4 32 00		II.2
2 55 I5		4.4	4 32 I5		I2.0

I	2	3
4 32'30"	6000	I2.0
4 32 45	...	II.6
4 33 00		II.2
4 33 I5		II.6
4 33 30		I2.8
4 33 45		II.6
4 34 00		II.6
4 34 I5		II.6
4 34 30		II.6
4 34 45		II.2
4 35 00		II.2
4 35 I5		8.4
4 35 30		9.2
4 35 45		8.4
4 36 00		I0.0
4 36 I5		9.6
4 36 30		7.I
4 36 45		I0.8
4 37 00		I0.4
4 37 I5		I0.4
4 37 30		I0.8
...	...	...
9/11/76 II.09.76 г.		
6 42 00	4000	9.9
6 42 I5	...	9.9
6 42 30		9.8
6 42 45		9.8
6 43 00		9.7
6 43 I5		9.7
6 43 30		9.5
6 43 45		9.4
6 44 00		9.3
6 44 I5		9.2
6 44 30		9.3
6 44 45		9.2
6 45 00		8.9
6 45 I5		9.0

I	2	3
6 45'30"	4000	8.8
6 45 45	...	8.7
6 46 00		9.6
6 46 I5		9.4
6 46 30		9.4
6 46 45		9.4
6 47 00		9.2
6 47 I5		9.I
6 47 30		9.0
6 47 45		8.8
6 48 00		8.8
6 48 I5		8.8
6 48 30		8.5
6 48 45		8.5
6 49 00		8.6
6 49 I5		8.7
6 49 30		8.8
6 49 45		8.8
6 50 00		8.8
6 50 I5		8.9
6 50 30		9.I
6 50 45		9.2
6 5I I5		9.I
6 5I 30		9.0
6 5I 45		9.5
6 52 00		9.I
6 52 I5		9.4
6 52 30		9.2
6 52 45		9.2
6 53 00		9.2
6 53 I5		I0.I
6 53 30		9.8
6 53 55		I0.0
6 54 00		I0.I
6 54 I5		I0.I
6 54 45		9.8
6 55 00		9.8

I	2	3
6 55'I5"	4000	9.6
6 55 30	"	9.6
6 55 45		9.8
6 56 00		9.9
6 56 I5		I0.0
6 56 30		I0.I
6 56 45		I0.I
6 57 00		I0.0
6 57 I5		9.8
6 57 30		9.6
6 57 45		9.5
6 58 00		I0.I
6 58 I5		9.7
6 58 30		I0.I
6 58 45		9.7
6 59 00		9.7
6 59 I5		9.9
6 59 30		9.7
6 59 45		9.9
7 00 00		9.9
7 00 I5		I0.0
7 00 30		9.9
7 00 45		I0.I
7 0I 00		I0.0
7 0I I5		I0.0
7 0I 30		I0.0
7 0I 45		I2.6
7 02 00		9.7
7 02 I5		9.7
7 02 30		9.6
7 02 45		9.4
7 03 00		9.3
7 04 00		7.7
7 04 30		7.9
7 04 45		8.3
7 05 00		8.5
7 05 I5		9.0

I	2	3
7 05'30"	4000	8.7
7 05 45	"	8.5
7 06 00		8.4
7 06 I5		8.5
7 06 30		8.6
7 06 45		8.6
7 07 00		8.8
7 07 30		8.3
7 07 45		8.8
7 08 00		9.3
7 08 I5		9.9
7 08 30		9.8
7 08 45		I0.I
7 09 00		I0.5
7 09 I5		I0.6
7 09 30		8.8
7 09 45		8.4
7 I0 00		8.8
7 I0 I5		9.0
7 I0 30		9.3
7 I0 45		9.3
7 II 00		9.4
7 II I5		9.4
7 II 30		9.I
7 II 45		8.I
7 I2 00		8.0
7 I2 I5		7.7
7 I2 30		7.7
7 I2 45		7.8
7 I3 00		8.0
7 I3 I5		7.7
7 I3 45		5.2
7 I4 00		5.4
7 I4 I5		5.5
7 I4 30		5.8
7 I4 45		5.9
7 I5 00		6.0

I	2	3
9/13/76	I3.09.76 г.	
2 43'00"	4000	9.5
2 43 I5		9.8
2 43 30		9.8
2 43 45		9.5
2 44 00		9.2
2 44 I5		8.I
2 44 30		7.9
2 44 45		7.5
2 45 00		7.2
2.45 I5		7.3
2 45 30		7.2
2 45 45		6.9
2 46 00		5.3
2 46 I5		5.2
2 46 30		5.7
2 46 45		6.I
2 47 00		6.0
2 47 I5		6.I
2 47 30		5.6
2 47 45		5.3
2 48 00		6.3
2 48 I5		5.9
2.48 30		5.4
2 48 45		5.4
2 49 00		5.8
2 49 I5		6.0
2 49 30		6.4
2 49 45		6.I
2 50 00		6.6
2 50 I5		7.0
2 50 30		7.3
2 50 45		7.8
2 5I 00		7.8
2 5I I5		7.7
2 5I 30		7.7
2 5I'45"	4000	7.6
2 52 00		7.7
2 52 I5		7.4
2 52 30		7.I
2 52 45		7.7
2 53 00		8.0
2 53 I5		8.I
2 53 30		7.8
2 54 00		7.7
2.54 I5		8.6
2 54 30		8.0
2 54 45		7.6
2 55 00		7.8
2 55 I5		8.2
2 55 30		8.4
2 55 45		8.4
2 56 00		8.2
2 56 I5		8.6
2 56 30		8.2
2 56 45		8.4
2 57 00		8.2
2 57 I5		8.2
2 57 30		8.I
2 57 45		8.7
2 58 00		8.7
2 58 I5		9.3
2 58 30		9.3
2 58 45		9.3
2 59 00		9.5
2 59 I5		9.2
2 59 30		9.6
2 59 45		9.8
3 00 00		I0.I
3 00 I5		9.9
3 00 30		I0.I
3 00 45		I0.4
3 0I 00		I0.4

I	2	3
3 0I'I5"	4000	I0.4
3 0I 30	"	I0.7
3 0I 45		I0.4
3 02 I5		I0.I
3 02 30		9.6
3 02 45		9.6
3 03 00		9.8
3 03 I5		9.8
3 03 30		9.6
3 03 45		9.8
3 04 00		9.8
3.04 I5		9.8
3 04 30		9.6
3 04 45		I0.2
3 05 00		9.9
3 05 I5		9.8
3 05 30		9.6
3 05 45		9.5
3 06 00		8.5
3 06 I5		9.5
3 06 30		9.4
3 06 45		9.6
3 07 00		8.9
3 07 I5		8.2
3 07 30		9.I
3 07 45		3.6
3 08 00		7.3
3 08 30		8.8
3 08 45		0.7
3 09 00		7.2
3 I6 I5		9.5
3 I6 30		9.8
3 I6 45		9.8
3 I7 00		I0.I
3 I7 I5		I0.I
3 I7 30		9.8
3 I7 45		I0.0

I	2	3
3 I8'00"	4000	I0.I
3 I8 I5	"	9.8
3 I8 30		I0.I
3 I8 45		9.8
3 I9 00		I0.0
3 I9 I5		I0.I
3 I9 30		I0.8
3 I9 45		I0.8
3 20 00		II.0
3 20 I5		I0.4
3 20 30		I0.0
3 20 45		I.4
3 2I 00		-0.9
3 2I I5		-0.9
3 2I 30		- 0.8
3 2I 45		I.2
3 22 00		3.0
3 22 I5		8.8
3 22 30		I0.0
3 22 45		I0.0
3 23 00		I0.6
3 23 I5		I0.2
3 23 30		I0.I
3 23 45		I0.6
3 24 00		-2.3
3 24 I5		9.7
3 24 30		I0.4
3 24 45		I0.8
3 25 00		I0.8
3 25 I5		I0.8
3 25 30		I0.8
3 25 45		I0.4
3 26 00		I0.8
3 26 I5		I0.8
3 26 30		9.9
3 26 45		9.5
3 27 00		I0.I

I	2	3
3 27'15"	4000	9.5
3 27 30	"	10.1
3 27 45		9.9
3 28 00		9.3
3 28 15		10.2
3 28 30		10.2
3 28 45		10.1
3 29 00		10.2
3 29 15		10.1
3 29 30		10.2
3 29 45		9.9
3 30 00		9.5
3 30 15		10.2
3 30 30		10.1
3 30 45		10.2
3 31 00		9.9
3 31 15		9.6
3 31 45		10.4
3 32 00		9.2
3 32 15		10.0
3.32 30		9.8
3 32 45		10.0
3 33 00		9.6
3 33 15		9.2
3 33 30		10.0
3 33 45		10.0
3 34 00		10.0
3 34 15		10.0
3 34 30		10.0
3 34 45		10.2
3 35 00		9.8
3 35 15		10.0
3 35 30		10.0
3 35 45		10.0
3 36 00		10.6
3 36 15		10.2
3 36 30		10.2
3 36'45"	4000	10.6
3 37 00	"	10.2
3 37 15		9.7
3 37 30		9.3
3 37 45		9.7
3 38 00		9.7
3 38 15		9.5
3 38 30		9.9
3 38 45		9.5
3 39 00		8.9
3 39 15		9.5
3 39 30		9.9
3 39 45		9.5
3 40 15		9.5
3 40 30		9.3
3 40 45		9.9
3 41 00		9.3
3 41 15		9.3
3 41 30		4.6
3 41 45		3.8
3 42 00		0.5
5 23 15	400	8.9
5 23 30	"	8.7
5 23 45		8.7
5 24 00		8.3
5 24 15		8.5
5 24 30		8.4
5 24 45		8.9
5 25 00		8.3
5 25 15		8.5
5 25 45		8.8
5 26 00		8.5
5 26 15		8.5
5 26 30		8.8
5 26 45		8.3
5 27 00		8.4
5 27 15		8.3

I	2	3	I	2	3
5 27'30"	400	8.8	5 46'45"	400	7.9
5 27 45		9.0	5 47 00		8.I
5 28 00		8.7	5 47 I5		7.9
5 28 I5		8.8	5 47 45		8.5
5 28 30		8.8	5 48 00		8.7
5 28 45		8.8	5 48 I5		8.4
5 29 00		8.8	5 48 30		8.8
5 29 I5		9.0	5 48 45		8.5
5 29 30		9.0	5 49 00		8.7
5 29 45		8.7	5 49 I5		8.7
5 30 00		8.7	5 49 45		8.7
5 30 I5		8.4	5 50 00		9.0
5 30 30		8.4	5 50 I5		8.5
5 30 45		8.3	5 50 30		8.5
5 3I 00		8.2	5 5I 00		8.I
5 3I I5		8.2	5 5I I5		8.I
5 3I 45		8.3	5 5I 30		7.9
5 32 00		8.3	7 26 00	4000	I0.2
5 32 I5		8.I	7 26 I5		I0.7
5 32 30		8.3	7 26 30		II.3
5 33 00		8.4	7 27 00		I0.9
5 42 30		7.9	7 27 I5		I0.9
5 42 45		7.9	7 27 30		I0.9
5 43 00		7.8	7 27 45		I0.7
5 43 I5		7.8	7 28 00		9.6
5 43 30		7.8	7 28 I5		I0.4
5 43 45		7.8	7 28 30		9.8
5 44 00		7.6	7 28 45		6.8
5 44 I5		7.6	7 29 00		7.I
5 44 30		7.6	7 29 I5		I0.2
5 45 00		7.9	7 29 30		I0.4
5 45 I5		7.6	7 29 45		II.0
5 45 30		7.8	7 30 00		I0.2
5 45 45		7.8	7 30 I5		I0.9
5 46 00		7.4	7 30 30		I0.9
5 46 I5		7.8	7 30 45		8.9
5 46 30		7.9	7 3I 00		8.5

I	2	3	I	2	3
7 3I'I5"	4000	8.5	8 I3'I5"	4000	9.6
7 3I 30		8.5	8 I3 30		9.7
7 3I 45		8.0	8 I3 45		6.8
7 32 00		8.0	8 I4 00		6.4
7 32 I5		8.6	8 I4 I5		6.8
7 32 30		8.5	8 I4 30		6.8
7 32 45		8.8	8 I4 45		6.8
7 33 00		8.7	8 I5 00		6.I
7 33 I5		8.6	8 I5 I5		6.8
7 33 30		8.2	8 I5 30		6.I
7 33 45		8.5	8 I5 45		6.4
7 34 00		7.6	8 I6 00		6.8
7 34 I5		8.I	8 I6 I5		6.4
7 34 30		7.I	8 I6 30		6.4
7 34 45		8.4	8 I6 45		6.4
7 35 00		9.0	8 I7 00		6.8
7 35 I5		8.4	8 I7 I5		6.I
7 35 30		8.8	8 I7 30		5.4
7 35 45		8.4	8 I7 45		6.4
7 36 00		8.5	8 I8 00		6.8
7 36 I5		8.6	8 I8 I5		6.8
7 36 45		8.4	8 I8 30		7.I
7 37 00		8.4	8 I8 45		7.I
7 37 I5		8.7	8 I9 00		7.4
7 37 30		8.5	8 I9 I5		7.4
8 I0 00		9.4	8 I9 30		7.I
8 I0 I5		9.6	8 I9 45		7.8
8 I0 30		9.7	8 20 00		7.4
8 I0 45		9.7	8 20 I5		6.8
8 II I5		I0.I	8 20 30		7.I
8 II 30		9.6	8 20 45		7.I
8 II 45		9.4	8 2I 00		6.3
8 I2 00		9.3	8 2I I5		9.I
8 I2 I5		9.3	8 2I 30		7.4
8 I2 30		9.2	8 2I 45		7.I
8 I2 45		9.8	8 22 00		7.I
8 I3 00		9.4	8 22 I5		7.4

I	2	3
8 22'30"	4000	7.I
8 22 45		7.8
8 23 00		7.4
8 23 I5		7.I
8 23 30		7.4
8 23 45		8.8
8 24 00		9.I
8 24 I5		9.8
8 24 30		9.I
8 24 45		8.8
8 25 00		8.4
8 25 I5		8.I
8 25 30		7.I
8 25 45		6.8
8 26 00		7.I
8 26 I5		7.8
8 26 30		8.I
8 26 45		8.I
8 27 00		8.4
8 27 I5		8.I
8 27 30		8.4
8 27 45		7.4
8 28 00		8.I
8 28 I5		7.8
8 28 30		7.I
8 28 45		7.4
8 29 00		7.I
8 29 I5		7.I
8 29 30		7.8
8 29 45		7.8
8 30 00		7.8
8 30 I5		8.8
8 30 30		7.4
8 30 45		6.I
8 3I 00		5.8
8 3I I5		6.4
8 3I 30		5.8
8 3I 45		5.4

I	2	3
8 32'00"	4000	6.I
8 32 I5		6.I
8 32 30		5.4
8 32 45		5.8
8 33 00		5.4
8 33 I5		5.4
8 33 30		6.I
8 33 45		4.7
8 34 00		6.I

10/13/76 I3.I0.76 г.

3 4I I5	6000	II.0
3 4I 30		I3.2
3 4I 45		9.5
3 42 I5		-8.I
3 42 30		-II.I
3 42 45		-9.3
3 43 00		-8.I
3 43 I5		-6.2
3 43 30		-I0.8
3 43 45		-4.0
3 44 00		I3.8
3 44 I5		I3.2
3 44 30		-I0.8
3 44 45		-I2.4
3 45 00		-I2.4
3 45 I5		#II.I
3 45 30		-5.3
3 45 45		-9.3
3 46 00		-8.4
3 46 I5		-7.8
3 46 30		-9.0
3 46 45		-I0.5
3 47 00		-9.6
3 47 I5		-8.7
3 47 30		-9.6
3 47 45		-9.9
3 48 00		-8.4

I	2	3
3 48 '15"	6000	-9.0
3 48 30	"	-9.9
3 48 45		-8.1
3 49 00		-5.6
3 49 15		-7.8
3 49 30		-11.1
3 49 45		-8.4
3 50 00		-9.0
4 57 30	3000	14.0
4 57 45	"	14.0
4 58 00		13.2
4 58 15		14.8
4 58 30		14.6
4 58 45		14.2
4 59 00		14.2
4 59 30		13.7
4 59 45		13.3
5 00 00		13.3
5 00 15		12.9
5 00 30		11.6
5 00 45		12.0
5 01 00		11.6
5 01 15		10.7
5 01 30		10.7
5 01 45		12.0
5 02 00		12.9
5 02 15		10.8
5 02 30		10.7
5 02 45		11.6
5 03 00		14.2
5 03 15		10.3
5 03 30		10.3
5 03 45		10.3
5 04 00		8.5
5 04 15		9.8
5 04 30		12.6
5 04 45		9.8

I	2	3
5 05 '00"	3000	11.6
5 05 15	"	10.4
5 05 30		9.0
5 05 45		9.4
5 06 00		9.4
5 06 15		9.8
5 06 30		10.2
5 06 45		11.1
5 07 00		11.1
5 07 15		10.2
5 07 30		9.3
5 07 45		8.5
5 08 00		8.9
5 08 15		6.3
5 08 30		7.6
5 08 45		7.2
5 09 00		6.8
5 09 15		9.8
5 09 30		8.5
5 09 45		10.2
5 10 15		7.6
5 10 30		8.0
5 10 45		6.3
5 11 00		8.0
5 11 15		8.0
5 20 15	1000	9.7
5 20 30	"	8.7
5 20 45		8.7
5 21 00		8.4
5 21 15		9.0
5 21 30		9.7
5 21 45		8.7
5 22 00		10.1
5 22 15		9.7
5 22 30		10.8
5 22 45		10.8
5 23 00		10.7

I	2	3
5 23'I5"	I000	9.7
5 23 30		9.4
5 23 45		I0.8
5 24 00		I0.I
5 24 I5		I0.4
5 24 30		I0.4
5 24 45		I0.8
5 25 00		I2.5
5 25 I5		I2.I
5 25 30		I2.8
5 25 45		I3.2
5 26 I5		I3.5
5 26 30		I4.2
5 26 45		I3.2
5 27 00		I3.5
5 27 I5		I3.8
5 27 30		I4.2
5 27 45		I4.9
5 28 00		I4.2
5 28 I5		I4.8
5 28 30		I5.2
5 28 45		I5.2
5 29 00		I5.2
5 29 I5		I5.6
5 29 30		I5.2
5 29 45		I5.6
5 30 00		I4.5
5 30 I5		I5.2
5 30 30		I4.9
5 3I 00		I4.5
5 3I I5		I4.2
5 3I 30		I5.2
5 3I 45		I4.9
5 32 I5		I4.9
5 32 30		I5.9
5 32 45		I4.2
5 33 00		I5.6

I	2	3
5 33'I5"	I000	I5.6
5 33 30		I5.9
5 33 45		I5.9
5 34 00		I5.6
5 34 I5		I5.2
5 34 30		I4.2
5 34 45		I4.5
5 35 00		I4.9
5 4I 00	500	I4.4
5 42 00		I3.6
5 47 00		I2.7
5 47 I5		I3.3
5 47 30		I2.6
5 47 45		I2.4
5 48 00		II.5
5 48 I5		II.7
5 48 30		I0.8
5 48 45		I0.2
5 49 00		9.9
5 49 I5		9.6
5 49 30		9.7
5 49 45		9.I
5 50 00		9.6
5 50 I5		I0.0
5 50 30		I0.I
5 50 45		I9.5
5 5I 00		9.4
5 5I I5		9.4
5 5I 30		8.9
5 5I 45		8.6
5 52 00		8.3
5 52 I5		8.I
5 52 30		8.3
5 52 45		8.4
5 53 00		8.3
5 53 I5		8.4
5 53 30		8.3

I	2	3
5 53'45"	500	8.0
5 54 00		8.0
5 58 00	200	8.9
5 58 I5		8.9
5 58 30		9.0
5 58 45		7.5
5 59 00		7.6
5 59 I5		7.5
5 59 30		7.3
5 59 45		7.5
6 00 00		7.3
6 00 I5		7.6
6 00 30		7.4
6 00 45		6.9
6 0I 00		7.I
6 0I I5		7.4
6 0I 30		6.9
6 0I 45		6.6
6 02 00		7.I
6 02 30		6.7
6 02 45		6.6
6 03 00		6.4
6 03 I5		6.4
6 03 30		6.6
6 03 45		6.6
6 04 00		6.0
6 04 I5		6.6
6 04 30		6.2
6 04 45		6.4
6 05 00		6.2
6 05 I5		6.2
6 05 30		6.0
6 05 45		6.9
6 06 00		7.0
6 06 I5		6.9
6 06 30		6.7
6 06 45		6.7

I	2	3
6 07'00"	200	6.5
6 07 I5		6.7
6 07 30		6.5
6 07 45		6.5
6 08 00		7.4
6 08 30		7.0
6 08 45		7.I
6 09 00		7.I
6 09 I5		7.0
6 09 30		7.0
6 09 45		7.I
6 I0 00		6.8
6 I0 I5		7.I
6 I0 30		7.0
6 I0 45		7.I
6 II 00		7.0
6 II I5		6.8
6 II 30		6.8
6 II 45		6.6
6 I2 00		7.4
6 I2 I5		7.4
6 I2 30		6.9
6 I2 45		6.9
6 I3 00		6.8

10/5/76

25.I0.76 г.

9 I7 I5	500	7.7
9 I7 30		7.4
9 I7 45		7.4
9 I8 00		7.3
9 I8 30		7.0
9 I8 45		6.7
9 I9 00		6.7
9 I9 I5		6.7
9 I9 30		6.6
9 I9 45		6.3

I	2	3
9 20'00"	500	6.9
9 20 30		7.0
9 20 45		6.4
9 2I 00		6.6
9 2I I5		6.6
9 2I 45		7.0
9 22 00		7.0
9 22 I5		6.9
9 22 30		6.8
9 23 00		7.I
9 23 I5		7.I
9 23 30		7.0
9 23 45		7.0
9 24 00		7.0
9 24 I5		6.8
9 24 30		6.4
9 24 45		5.9
9 25 00		5.3
9 25 I5		5.4
9 25 30		5.4
9 25 45		5.4
9 26 00		5.6
9 26 I5		6.I
9 26 30		6.7
9 26 45		7.I
9 27 00		7.4
9 27 I5		7.7
9 27 30		7.6
9 27 45		7.7
9 28 00		7.7
9 28 I5		7.4
9 28 30		7.4
9 29 00		7.3
9 29 I5		7.I
9 29 30		6.8
9 29 45		7.0
9 30 00		7.0

I	2	3
9 30'I5"	500	7.I
9 30 30		7.3
9 30 45		7.3
9 3I 00		7.0
10/30.76	30.I0.76 г.	
5 50 00	6000	-9.2
5 50 I5		-9.0
5 50 30		-9.7
5 50 45		-8.7
5 5I 00		-8.8
5 5I I5		-8.2
5 5I 30		-9.0
5 5I 45		-7.9
5 52 00		-5.6
5 52 I5		-5.2
5 52 30		-4.4
5 52 45		-4.0
5 53 00		-3.6
5 53 I5		-2.7
5 53 30		-2.7
5 53 45		-2.2
5 54 00		-2.5
5 54 I5		-2.5
5 54 30		-2.2
8 I2 00	500	7.2
8 I2 I5		6.4
8 I2 30		6.I
8 I2 45		5.3
8 I3 00		5.3
8 I3 I5		5.I
8 I3 30		5.6
8 I4 00		6.3
8 I4 I5		5.6
8 I4 30		5.2
8 I4 45		5.0

I	2	3
8 I5' I5"	500	5.0
8 I5 30		4.8
8 I5 45		4.5
8 I6 00		4.8
8 I6 30		5.0
8 I6 45		4.7
8 I7 00		4.7
8 I7 I5		4.5
8 I7 30		4.7
8 I7 45		5.5
8 I8 00		5.5
8 I8 I5		5.3
8 I8 30		4.8
8 I8 45		5.2
8 I9 00		5.6
8 I9 I5		5.6
8 I9 30		6.0
8 I9 45		6.3
8 20 00		6.3
8 20 I5		6.5
8 20 30		6.3
8 20 45		6.3
8 2I 00		7.0
8 2I I5		7.0
8.2I.30		6.8
8.2I.45		6.5
8.22.00		7.0
8 22 I5		6.7
8 22 30		6.7
8 22 45		6.7
8 23 00		6.5
8 23 I5		6.5
8 23 30		6.7
8.23.45		6.7
8.24.00		6.4
8 24 I5		6.4
8 24 30		6.2
8 24' 45"	500	6.2
8 25 00		6.2
8 25 I5		6.4
8 25 30		6.2
8 26 00		6.5
8 40 00	6000	3.8
8 40 I5		4.0
8 40 30		4.5
8 40 45		4.8
8 4I 00		4.6
8 4I I5		4.6
8 4I 30		4.8
8 4I 45		5.0
8 42 00		5.0
8 42 I5		5.6
8 42 30		5.3
8 42 45		5.5
8 43 00		5.5
8 43 I5		5.6
8 43 30		5.6
8 43 45		5.3
8 44 00		5.5
8 44 I5		-0.8
8 44 30		4.8
8 44 45		5.5
8 45 00		5.8
8 45 I5		6.0
8 45 30		6.3
8 45 45		6.0
8 46 00		5.6
8 46 I5		5.5
8 46 30		5.3
8 46 45		-7.4
8 47 I5		-2.5
8 47 30		-5.I
8 47 45		3.5
8 48 00		2.9

I	2	3
8 48'45"	6000	-7.2
8 49 00		-9.7
8 49 I5		-II.4
8 49 30		-II.8
8 49 45		-8.I
8 50 00		4.4
8 50 I5		4.7
8 50 30		4.7
8 50 45		4.6
8 5I 00		4.8
8 5I I5		4.8
8 5I 30		4.8
8 5I 45		5.0
8.52 00		4.7
8 52 I5		4.8
8 52 30		5.0
8 52 45		5.0
8 53 00		5.3
8 53 I5		5.4
8 53 30		5.3

I	2	3
8 53'45"	6000	5.9
8 54 00		5.9
8 54 I5		5.6
8 54 30		5.4
8 54 45		5.6
8 55 00		5.7
8 55 I5		5.2
8 55 45		3.8
8 56 00		3.8
8 56 I5		4.2
8 56 30		4.3
8 56 45		4.6
8 57 30		2.0
8 57 45		2.4
8 58 00		2.4
8 58 I5		2.6
8 58 30		2.8
8 58 45		3.I
8 59 00		3.6

Key to page 50.

Table III-1-3 /45.
Data on Aircraft Sounding of the Atmosphere (Moscow Time)
September 10, 1976, Petropavlovsk- Kamchatka

1. time
2. H, km
3. P, mm
4. Visual observations
5. higher than 2 Stfr. Lower than 10Sc
6. higher than 10 As. Lower than 8 Sc.
7. Ocean 1 B (bel)
8. Higher than 10 As. Lower than 2 Sc.
9. Ocean 1 B
10. Higher than 10 As. Lower than 2 Sc.
11. Higher than 10 As. Lower than 9 St.
12. Higher than 10 Cs neb. Lower than 10 Sc.
13. Higher than Cc floc. Lower than 10 Ac, Sc.
14. Higher than 10 Cc, Lower than 10 AcSc
15. Higher than 9 Cc, Lower than 10 Ac, Sc
16. Went into the clouds
17. Higher than 10 Cc, lower than 10 Ac, Sc
18. Higher than 10 Csneb, lower than 9 Ac, Sc.

Key to page 51 /46.
1. Higher than 10 Cs, lower than 10 AcSc
2. Higher than 9 Cs, lower than 10 AcSc
3. Higher than 8 Cs, lower than 10 AcSc
4. Went into the clouds
5. Came out of the clouds
6. Higher than 10 Cs, lower than 10 AcSc
7. Higher than 10 Cc floc, lower than 10 AcScb

Key to page 52 /47.
1. Higher than 10 CcCs, lower than 10 Ac,Sc,b
2. Higher than 10 Cc, lower than 10 Ac, Sc, b
3. Higher than 10 Cs, lower than 10 Ac, Sc, b
4. Higher than 10 Cc, lower than 10 Ac, Sc, b
5. Higher than 10 Cc, lower than 10 Sc
6. Foam in the form of caps - 12%
7. Higher than 10 Cc, lower than 10 Sc.

Key to page 59 /48.
1. Higher than 10 Cc, lower than 10 Sc
2. Higher than 10 Cc, lower than 10 Sc, Ac
3. Higher than 10 Cc, lower than 10 Ac, Sc (Br, Ac)
4. Higher than 10 Cs, lower than 10 Sc
5. Higher than 10 Cs, lower than 10 Sc
6. Higher than 10 Ci int, lower than 10 Sc

Таблица III-1-3

Данные самолётного зондирования атмосферы /45.

(время московское)

Петропавловск-Камчатский

10 сентября 1976 г.

Время	Н км	Р мм	t_f °C	$T_{тр}$ °C	υ %	$t_{в.п}$ °C	Визуальные наблюдения
1	2	3	4	5	6	7	8
01.38	0	997.2	11.0	- 7.2	98		
40	0.54	934	4.1	(4.2	101)	5	Выше 2 St fr. Ниже 10
41.5	1.03	879	3.5	2.3	92		Выше 2 St fr. Ниже 10 Hz Sc
43.5	1.58	821	0.1	(1.0	107)		Bz Sc
44	1.84	795	-1.4	(-0.9	104)		
45.5	2.20	760	0.4	-6.8	58	6	Выше 10 As. Ниже 8 Sc
						7	Океан I б.
49	3.01	687	1.1			8	Выше 10 As, ниже 2
						9	Океан I б.
01.54	4.05	602	-6.8	-22.5	28	10	Выше 10 As, ниже 2 Sc
02.00	5.08	5.27	-12.9			11	Выше 10 As, ниже 9 Sc
11	6.14	458	-20.0			12	Выше 10 Cs neb, ниже 10 Sc
37	6.14	458	-15.9	-32.1	24	13	Выше 10 Cc flоc., ниже 10 Ac, Sc
45	6.14	458	-16.3	-31.5	26	14	Выше 10 Cc, ниже 10 Ac Sc
46	6.14	458	-15.4	-30.6	26		
47	6.14	458	-15.1	-28.8	30		
48	6.14	458	-15.1				
49	6.14	458	-15.9				
50	6.14	458	-16.1				
51	6.14	458	-16.5	-31.8	26		
52	6.14	458	-17.0	-32.5	25	15	Выше 9 Cc, ниже 10 Ac Sc
53	6.14	458	-17.4	-31.4	29		
54	6.14	458	-16.8	-33.6	22		
55	6.14	458	-16.9	-33.2	23		
56	6.14	458	-17.0				
57	6.14	458	-17.8				
58	6.14	458	-19.0			16	Вошли в облако
02.59	6.14	458	-17.9				
03.00	6.14	458	-17.9			17	Выше 10 Cc, ниже 10 Ac, Sc
10	6.14	458	-18.5			18	Выше 10 Cs neb, ниже 9 As Sc
11	6.14	458	-18.5				

1	2	3	4	5	6	7	8
03.I2	6.I4	458	-I7.9				
I3	6.I4	458	-I7.6				
I4	6.I4	458	-I7.6	-22.5	66		
I5	6.I4	458	-I8.6	-2I.6	77		
I6	6.I4	458	-I8.4	-22.2	72		
I7	6.I4	458	-I8.3	-29.2	7I		
I8	6.I4	458	-I7.8	-24.5	56		
I9	6.I4	458	-I6.8	-25.0	49		
20	6.I4	458	-I6.2	-30.0	29		Выше IO Cs ,ниже IO
2I	6.I4	458	-I6.0	-3I.3	26		
22	6.I4	458	-I5.9	-29.0	32		
23	6.I4	458	-I5.9	-28.3	34		
24	6.I4	458	-I5.8	-29.5	30		
25	6.I4	458	-I5.3	-30.0	27	2	Выше 9 Cs , ниже IO A
35.5	6.I4	458	-I5.8	-2I.5	6I	3	Выше 8 Cs, ниже IO A
36.5	6.I4	458	-I6.3	-25.I	47		
37.5	6.I4	458	-I7.3	-26.4	45		
38.5	6.I4	458	-I7.6	-2I.0	75		
39.5	6.I4	458	-I6.4	-28.6	35	4	Вошли в облако
40.5	6.I4	458	-I6.6	-I8.0	89		
4I	6.I4	458	-I6.6	-I8.0	89	5	Вышли из облака
4I.5	6.I4	458	-I6.6	-I9.I	8I		
42.5	6.I4	458	-I6.8	-25.6	46		
43.5	6.I4	458	-I6.8	-30.2	30		
44.5	6.I4	458	-I7.4				
45.5	6.I4	458	-I8.9				
03.46.5	6.I4	458	-I9.5				
47.5	6.I4	458	-I9.6				
48.5	6.I4	458	-I9.6				
49.5	6.I4	458	-I9.6				
50.5	6.I4	458	-I9.2				
5I.5	6.I4	458	-I9.2				
03.52	6.I4	458	-I9.2			6	Выше IO Cs ,ниже IO
04.04	6.I4	458	-I9.6			7	Выше IO Cs flac, ниже IO
05	6.I4	458	-I9.6				
06	6.I4	458	-I9.6				
07.	6.I4	458	-I9.6				
04.08	6.I4	458	-I9.7				

1	2	3	4	5	6	7	8
04.09.	6.I4	458	-I8.8	-27.I	52		
I0	6.I4	458	-I7.7	-23.0	63		
II	6.I4	458	-I7.5	-2I.4	72		
I2	6.I4	458	-I7.5	-2I.3	72		
I3	6.I4	458	-I7.5	-20.I	80		Выше IO Cc Cs, Ниже IO Sc-b
I4	6.I4	458	-I7.0	-2I.8	66		
I5	6.I4	458	-I7.9	-2I.6	73		
I6	6.I4	458	-I7.8	-2I.8	7I		
I7	6.I4	458	-I7.4	-20.9	74		
I8	6.I4	458	-I7.I	-2I.5	69		
I9.5	6.I4	458	-I6.7	-20.4	73		Выше IO Cc, ниже IO Ac Sc, b
28	6.I4	458	-I7.8	-22.9	64		-"-
29	6.I4	458	-I7.4	-22.4	65		
30	6.I4	458	-I7.4	-2I.6	70		
04.3I	6.I4	458	-22.2	-22.2	66		
32	6.I4	458	-I7.7	-22.2	68		
33	6.I4	458	-I8.0	-23.2	64		
34	6.I4	458	-I8.0	-23.7	6I		Выше IO Cs, ниже IO Ac Sc b
35	6.I4	458	-I8.4	-25.0	56		
36	6.I4	458	-I8.I				
37	6.I4	458	-I8.I				
38	6.I4	458	-I8.5			-I7.7	
39	6.I4	458	-I8.5				
40	6.I4	458	-I8.8				
4I	6.I4	458	-I9.4				
42	6.I4	458	-I9.4				
к 43	6.I4	458	-20.2				Выше IO Cc, ниже IO Ac Sc b
47	5.07	528	-I4.0				Выше IO Cc, ниже IO Sc Пена в виде шапки
н 54	3.93	6I2	-4.5				Выше IO Cc, ниже IO Sc
55	3.93	6I2	-5.3				
56	3.93	6I2	-5.3				
57	3.93	6I2	-5.3				
58	3.93	6I2	-5.2				
04.59	3.93	6I2	-5.2				
05.00	3.93	6I2	-5.I				
0I	3.93	6I2	-5.I				

05.02	3.93	6I2	-5.I				
03	3.93	6I2	-5.3				
04	3.93	6I2	-5.3				
05	3.93	6I2	-5.2				
06	3.93	6I2	-5.I				
07	3.93	6I2	-5.I				
08	3.93	6I2	-4.7				
к 09	3.93	6I2	-4.7				
н I4.45	2.88	698	-0.4				
I5	2.88	698	-0.4				
I6	2.88	698	0.0				
I7	2.88	6.98	0.7				
I8	2.88	698	0.7				
I9	2.88	698	0.7				
20	2.88	698	0.2				
2I	2.88	698	-0.2				
22	2.88	698	-0.4				
23	2.88	698	-0.7				
24	2.88	698	-0.6				
25	2.88	698	-0.8			-0.2	
26	2.88	698	-0.8				
27	2.88	698	-0.6				
28	2.88	698	-066				
29	2.88	698	-0.6				
к 30.5	2.88	698	-0.6				
н 38	I.90	789	3.7	-0.I	76		
39	I.90	789	2.9	(3.4	I04)		
40	I.90	789	2.9	(3.9	I07)		
4I	I.90	789	2.9	(4.0	I08)		
42	I.90	789	2.7	(4.0	II0)		
43	I.90	789	2.7	(4.4	II3)		
44	I.90	789	2.7	(4.4	II3)		
45	I.90	789	2.7	(4.0	II0)		
46	I.90	789	2.7	(5.0	II8)		
05.47	I.90	789	2.6	(3.8	I09)		
48	I.90	789	2.6	(5.0	II8)		
49	I.90	789	2.6	(5.0	II8)		
50	I.90	789	2.6	(4.8	II7)		
05.5I	I.90	789	2.5	(4.0	III)	2.7	

Выше IOCc, ниже IOSc

2 Выше IOCc, ниже IOSc

3 Выше IOCc, ниже IOSc
(Bc, Ac)

4 Выше IOCs, ниже IOSc

5 Выше IOCs, ниже IOSc

1 Выше IOCi int. Ниже IOSc

Key to text page 55 /49.

1. Higher than 10 Cc As, Lower than 10 St Bst Br Sc
2. Higher than 10 Ac, lower than 10 St
3. Higher than 10 Cc, lower than 10 St
4. Higher than 10 Cc, lower than 10 St.

Key to text page 56 /50.

1. Note: 5:38-6.52 - the operation of the thermohygrometer was unsatisfactory.

Key to text page 57 /51.

1. Table III-13
2. Data on Aircraft Sounding of the Atmosphere (Moscow Time) Petropavolvsk-Kamchatskiy - September 11, 1976
3. Time
4. H.. km
5. P, mm
6. visual observations
7. higher than 8 Sc (cold front)
8. higher than 8 Sc
9. HrSc lower than 5 Ac
10. HrSc Foam 8%
11. Higher than 6 Ac Br Sc
12. Higher than 5 Ac Lower than 10 Sc
13. Higher than 8 Ac Lower than 7 Sc. Dry
14. Higher than 8 Ac Lower than 7 Sc
15. Ocean 7 B
16. Higher than 7 Ci, lower than 3 Ac
17. Ocean - 8 B Turbulence

Key to text page 58 /52.

1. higher than 4 Ci floc. Lower than 1-2 Cu
2. ocean - 8 B.
3. Higher clear, in the direction of Ci,
4. Lower than 1 Cu, Ocean - 8 B.
5. Higher than 8 As, lower clear
6. ocean - 7 B
7. Higher than 7 As, Ac. Lower clear
8. Ocean - 7 B.

Key to page 59 /53.

1. Higher than 5 Ac, lower clear
2. ocean - 7 B.
3. Higher than 6 Ac, lower clear,
4. Ocean - 7 B.
5. Higher than 6 Ac, lower clear
6. ocean - 7 B.
7. Higher than 7 Ac, lower clear
8. ocean - 2 B.
9. Higher than 7 Ac. Lower clear
10. Ocean 8 B
11. Higher than 9 Ac, lower clear
12. ocean - 8 B.

1	2	3	4	5	6	7	8
05.52	I.90	789	2.I	(4.0	II4)		/49.
к 53	I.90	789	2.I	(4.0	II0)		1 Выше IO Cc As . Ниже IO St BSt Br Sc
н 57	0.92	890	5.9	(I2.6	I57)		
58	0.92	890	5.9	(II.5	I46)		
05.59	0.92	890	6.7	(II.0	I34)		
06.00	0.92	890	5.9	(II.6	I47)		
06.0I	0.92	890	5.9	(II.6	I47)		
02	0.92	890	7.4	(I0.9	I27)		2 Выше IO Ac , ниже IO
03	0.92	890	7.2	(I0.8	I28)		
04	0.92	890	7.2	(I0.5	I25)		3 Выше IO Cc , ниже IO S
05	0.92	890	7.3	(I0.0	I20)	7.2	
06	0.92	890	7.3	(9.6	II7)		
07	0.92	890	8.0	(9.6	III)		
08	0.92	890	8.2	(9.I	I06)		
09	0.92	890	8.7	8.2	97		
I0	0.92	890	8.0	7.4	96		
II	0.92	890	8.0	7.I	94		
к I2	0.92	890	7.6	7.0	96		4 Выше IO Cc , ниже IO St
I3.5	0.67	9I7	6.8	(II.0	I33)		BS St
н I6	0.4I	947	3.5	(I0.I	I57)		BSt
I7	0.4I	947	3.5	(I0.I	I57)		
I8	0.4I	947	3.6	(9.7	I52)		
I9	0.4I	947	3.6	(I0.3	I59)		
20	0.4I	947	3.6	(I0.3	I59)		
2I	0.4I	947	3.I	(I0.3	I64)		
22	0.4I	947	3.6	(I0.3	I59)		
23	0.4I	947	3.6	(I0.3	I58)		
24	0.4I	947	2.9	(9.2	I55)		
25	0.4I	947	3.0	(I0.5	I68)		
26	0.4I	947	2.4	(9.7	I66)		BSt
27	0.4I	947	2.3	(9.3	I62)		
28	0.4I	947	2.3	(8.0	I49)		
29	0.4I	947	2.3	(9.I	I60)	3.I	
30	0.4I	947	3.I	(9.2	I52)		
к 3I	0.4I	947	3.8	(9.5	I48)		BSt
н 35.5	0.I2	982	2.6	(I9.6	I74)		BSt
36.5	0.I2	982	2.6	(I0.7	I75)		
06.37.5	0.I2	982	2.6	(I0.6	I74)		

I	2	3	4	5	6	7	8
06.38.5	0.I2	982	2.4	(I0.I	I70)		
39.5	0.I2	982	2.5	(I0.0	I68)		
40	0.I2	982	2.5	(I0.0	I68)		BSt
40.5	0.I2	982	2.5	(I0.0	I68)		
4I.5	0.I2	982	2.5	(I0.4	I72)	2.5	
42.5	0.I2	982	2.5	(I0.2	I70)		
43.5	0.I2	982	2.5	(I0.6	I75)		
44.5	0.I2	982	2.5	(I0.2	I70)		
45.5	0.I2	982	2.5	(I0.2	I70)		
46.5	0.I2	982	2.5	(I0.2	I70)		
47.5	0.I2	982	2.5	(I0.2	I70)		
48.5	0.I2	982	2.5	(9.8	I66)		
49.5	0.I2	982	2.5	(I0.I	I69)		
к 50.5	0.I2	982	2.5	(9.9	I67)		BSt
06.5I.5	0.47	940	3.9	(II.I	I64)		Br St

Примечание: 5.38–6.52 – работа термогигрометра неудовлетворительная.

2 Данные самолётного зондирования атмосферы
(время московское)
Петропавловск-Камчатский
II сентября 1976 г.

6

3 Время	4 Нкм	5 Рмм	tC	Ттр°C	U %	tср.в °C	Визуальные наблюдени
I	2	3	4	5	6	7	8
01.15	0	998.6	14.6		68		
17.5	0.54	936	5.3	-0.3	67		7 Выше 8 Sc (холодн. фро
20.	1.20	862	-1.0	-2.5	89		8 Выше 8 Sc
20.5	1.43	837	-2.4	-2.5	99		9 Hr Sc Ниже 5 Ac
22.	1.99	780	-5.6	-5.8	98		10 Hr Sc Пена 8%
23.5	2.39	741	-8.9	-8.3			11 Выше 6 Ac. Br Sc
25	2.99	686	-8.9				12 Выше 5 Ac. Ниже 10 Sc
30	3.85	613	-13.4	-23.6	42		13 Выше 8 Ac. Ниже 7 Sc. C
и 45	3.85	613	-14.5	-24.3	43		14 Выше 8 Ac, ниже 7 Sc.
							15 Океан 7 б.
46	3.85	613	-14.5	-25.0	40		
47	3.85	613	-14.6	-26.1	37		
48	3.85	613	-15.0				
49	3.85	613	-13.9				
50	3.85	613	-13.9				
51	3.85	613	-14.7				
52	3.85	613	-14.2				
53	3.85	613	-14.8				
54	3.85	613	-15.2				
55	3.85	613	-14.2				
56	3.85	613	-13.4				
57	3.85	613	-14.4				
58	3.85	613	-13.0				
01.59	3.85	613	-12.1				
02.00	3.85	613	-13.2				16 Выше 7 Ci, ниже 3 Ac
							17 океан - 8 б. болт.
01	3.85	613	-12.8				
02	3.85	613	-11.9				
03	3.85	613	-10.8				
04	3.85	613	-12.3				
05	3.85	613	-9.2				
02.06	3.85	613	-9.2				

1	2	3	4	5	6	7	8
02.07	3.85	6I3	-I0.8				
08	3.85	6I3	-I0.0				
09	3.85	6I3	-I0.0				
I0	3.85	6I3	-I0.0				
II	3.85	6I3	-9.9				
I2	3.85	6I3	-9.7				
I3	3.85	6I3	-9.0				
I4	3.85	6I3	-8.7				
I5	3.85	6I3	-9.2				
I6	3.85	6I3	-9.2				
I7	3.85	6I3	-9.2				
I8	3.85	6I3	-8.6				
I9	3.85	6I3	-8.2				
20	3.85	6I3	-7.7				
2I	3.85	6I3	-8.I				
22	3.85	6I3	-8.4				
23	3.85	6I3	-8.4				
24	3.85	6I3	-8.9				
25	3.85	6I3	-8.8				
26	3.85	6I3	-9.2				
27	3.85	6I3	-9.2				
28	3.85	6I3	-8.7				
29	3.85	6I3	-9.I				
30	3.85	6I3	-8.7				
3I	3.85	6I3	-8.7				
32	3.85	6I3	-8.9				
33	3.85	6I3	-9.I				
34	3.85	6I3	-8.9				
35	3.85	6I3	-8.6				
36	3.85	6I3	- 8.6				
36.5	3.85	6I3	-8.6				
43	3.85	6I3	-8.I				
44	3.85	6I3	-8.7				
45	3.85	6I3	-8.5				
46	3.85	6I3	-8.5				
02.47	3.85	6I3	-9.I				

1 Выше 4Ci fioc. Ниже I–2Cv
2 океан – 8 б.

3 Выше ясно, в стор. Ci
4 ниже I Cu, океан –

5 Выше 8 As, ниже ясн
6 океан – 7 б.
–"–

7 Выше 7fs, fc. Ниже яс
8 океан – 7 б.

I	2	3	4	5	6	7	8

02.48	3.85	6I3	-9.I	
49	3.85	6I3	-9.3	
50	3.85	6I3	-8.9	
5I	3.85	6I3	-8.5	
52	3.85	6I3	-8.4	
53	3.85	6I3	-8.8	
54	3.85	6I3	-8.3	
55	3.85	6I3	-8.3	
56	3.85	6I3	-8.2	
57	3.85	6I3	-7.7	
58	3.85	6I3	-7.7	
02.59	3.85	6I3	-7.8	
03.00	3.85	6I3	-7.8	
0I	3.85	6I3	-8.3	
02	3.85	6I3	-8.3	
03	3.85	6I3	-8.5	
04	3.85	6I3	-8.6	
05	3.85	6I3	-8.6	1 Выше 5 Ac ,ниже ясн 2 океан – 7 б.
I2	3.85	6I3	-8.9	3 Выше 6 Ac ,ниже ясн 4 океан – 7 б.
I3	3.85	6I3	-9.I	
I4	3.85	6I3	-9.I	
I5	3.85	6I3	-9.8	
I6	3.85	6I3	-I0.2	
I7	3.85	6I3	-9.7	
I7.5	3.85	6I3	-9.7	5 Выше 6 Ac ,ниже ясн 6 океан – 7 б.
23	3.85	6I3	-8.4	7 Выше 7 Ac, ниже ясн 8 океан 2 б.
24	3.85	6I3	-9.5	
25	3.85	6I3	-9.0	
26	3.85	6I3	-9.2	
27	3.85	6I3	-9.2	
28	3.85	6I3	-8.7	
29	3.85	6I3	-8.7	9 Выше 7 Ac, ниже ясн 10 океан – 8 б.
42	3.85	6I3	-8.6	11 Выше 9 Ac, ниже ясн 12 океан – 8 б.
03.43	3.85	6I3	-8.8	

Key to page 61. /54.

1. Higher than 9-10 Ac. Lower clear, ocean - 8 B.
2. Higher than 10 Ac, lower clear, ocean - 7 B.
3. Higher than 8 Ac, lower clear, ocean - 8 B.
4. Higher than 8 Ac, lower clear, ocean - 8 B.
5. Higher than 4 Ac, lower clear, ocean - 8 B.
6. Higher than 2 Ac, lower clear.
7. Higher than 1 Ac, lower clear
8. Higher than 1 Ac, lower than 1 Sc.

Key to page 62. /55.

1. Higher than 10 Ac,Cc
2. Higher than 10 Ac, lower clear.
3. Higher than 10 Ac, lower than 10 Atrans.
4. Higher than 10 As, lower than 2 As.
5. Higher than 10 Ac., lower clear.
6. Higher than 6 Ac, lower than 1 Sc.
7. Higher than 8 As, lower than 1 Sc.
8. Higher than 8 As, lower clear
9. Higher than 8 As, lower clear, ocean - 8 B.
10. Higher than 8 As, lower clear, ocean - 8 B.

Key to page 63. /56.

1. Higher than 7 AsAc. Lower clear, ocean - 8 B.
2. Higher than 6 Ac, lower clear, ocean 8 B.
3. Higher than 8 Ac, lower clear, Ocean - 8 B, turbulent.
4. Higher than 7 Ac, lower clear, ocean 8 B.
5. Higher than 8 Ac, lower clear, ocean 8 B.
6. Higher than 8 Ac,As. Lower clear. Ocean - 8 B.
7. Higher than 9 Ac, As. Lower clear. Ocean - 8 B.

Key to page 64. /57.

1. Higher than 10 As, lower clear, ocean - 8 B.
2. Higher than 10 As, lower clear, ocean 6 - B.
3. Higher than 10 As, lower than 2 Sc, ocean - 5 B.
4. Higher than 10 As, lower than 2 Sc, Ocean swell of 5 B.

Key to page 65, Table III-1-3 /58.

1. Data on Aircraft Sounding of the Atmosphere. (Moscow Time) September 13, 1076 Petropavlovsk
2. Time
3. H, km
4. P, mm
5. visual observations
6. table III-1-3
7. Higher clear
8. higher clear, lower dry land
9. higher clear
10. higher lear, lower clear, hilly surface
11. higher clear, lower clear.
12. higher clear, lower clear, hilly dry land.
13. higher clear, lower clear, bay
14. higher clear, lower clear, ocean 1-2 B.
15. higher than 5 Ci, lower clear, ocean, - 2 B.

I	2	3	4	5	6	7	8 /54.
03.44	3.85	6I3	-8.8				
45	3.85	6I3	-8.7				
46	3.85	6I3	-8.8	-30.I	I6		1 Выше 9-I0 Ac. Ниже ясн океан - 8 б.
47	3.85	6I3	-8.8	-30.I	I6		
48	3.85	6I3	-8.8				
49	3.85	6I3	-8.7				
50	3.85	6I3	-8.4				
5I	3.85	6I3	-8.3				
03.52	3.85	6I3	-8.3				2 Выше [I0] Ac, ниже ясно океан - 7 б.
04.00	3.85	6I3	-8.6				3 Выше 8 Ac, ниже ясно, океан - 8 б.
0I	3.85	6I3	-9.0				
02	3.85	6I3	-9.0				
03	3.85	6I3	-9.2				
04	3.85	6I3	-8.8				
05	3.85	6I3	-8.4				
06	3.85	6I3	-8.4			-9.7	
07	3.85	6I3	-8.4				
08	3.85	6I3	-7.6				
09	3.85	6I3	-8.3				
к I0.5	3.85	6I3	-8.8				4 Выше 8 Ac, ниже ясно. океан - 8 б.
I5	5.0I	527	-I5.I	-20.2	65		5 Выше 4 Ac, ниже ясн океан - 8 б.
н 23	5.95	465	-I9.7	-24.9	63		-"-
24	5.95	465	-I9.8	-24.2	68		
25	5.95	465	-I9.2	-24.8	6I		
26	5.95	465	-I9.7	-23.9	69		6 Выше 2 Ac, ниже ясн
27	5.95	465	-20.3	-23.9	73		
28	5.95	465	-20.7	-24.6	70		
29	5.95	465	-20.6	-24.6	70		
30	5.95	465	-20.6	-22.9	8I		
3I	5.95	465	-20.6	-25.3	65		
32	5.95	465	-20.6	-24.4	7I		7 Выше I Ac, ниже ясно
46	5.95	465	-20.I	-23.7	72		8 Выше I Ac, ниже I Sc
47	5.95	465	-20.8	-26.0	63		
04.48	5.95	465	-20.8	-25.I	68		

1	2	3	4	5	6	7	8 /55.
04.49	5.95	465	-20.6	-24.3	72		
50	5.95	465	-20.7	-25.2	67		
51	5.95	465	-20.7	-22.9	82		
52	5.95	465	-20.6	-22.9	81		
53	5.95	465	-20.6	-22.4	85		
54	5.95	465	-20.4	-21.1	93		
55	5.95	465	-20.2	-21.0	93	1	Выше 10 As,Cc
56	5.95	465	-19.9	-22.3	81		
57	5.95	465	-19.4	-22.9	73		
58	5.95	465	-19.5	-22.6	76		
04.59	5.95	465	-19.5	-22.1	79		
05.00	5.95	465	-19.4	-21.3	85	2	Выше 10 Ac ,ниже ясн
01	5.95	465	-19.8	-21.9	83		
02	5.95	465	-19.8	-21.9	83		
18	5.95	465	-20.3	-19.9	100	3	Выше 10 Ac,ниже 10As
19	5.95	465	-19.9	-19.9	100		
20	5.95	465	-19.7	-19.9	98		
21	5.95	465	-19.7	-20.2	96		
22	5.95	465	-19.6	-22.1	80	4	Выше 10 As, ниже 2 A
23	5.95	465	-19.9	-20.9	92		
24	5.95	465	-19.6	-20.9	90		
25	5.95	465	-19.6	-21.4	86		
26	5.95	465	-19.7	-21.4	87		
27	5.95	465	-19.7	-21.9	83		
к 27.5	5.95	465	-19.6	-23.9	69	5	Выше 10 Ac .Ниже ясн
34.5	4.35	575	-13.7	-31.4	21	6	Выше 6 Ac, ниже 1Sc
36	3.98	604	-11.3			7	Выше 8 As, ниже 1Sc
40	2.96	688	-4.5			8	Выше 8 As , ниже ясн
н 54.5	1.87	790	-2.1			9	Выше 8 As, ниже ясно океан – 8 б.
55.5	1.87	790	-1.9				
56.5	1.87	790	-1.5				
57.5	1.87	790	-1.6				
58.5	1.87	790	-1.4				
05.59.5	1.87	790	-1.8				
06.00.5	1.87	790	-1.9			10	Выше 8 As, ниже ясн океан– 8 б.
01.5	1.87	790	-2.8	-16.2	35		
06.02.5	1.87	790	-2.5	-16.6	33	-2.0	

	1	2	3	4	5	6	7	8 /56.
	06.03.5	I.87	790	-2.2				
к	04.5	I.87	790	-I.9				
	08	0.93	888	2.5	-I0.6	37		1 Выше 7 As Ac. Ниже ясн океан – 8 б.
н	I4	0.4I	948	I.8	(2.7	I05)		2 Выше 6 Ac, ниже ясно океан – 8 б.
	I5	0.4I	948	I.4	(2.I	I04)		
	I6	0.4I	948	I.8	I.5	97		
	I7	0.4I	948	2.4	0.5	87		
	I8	0.4I	948	I.9	I.7	98		
	I9	0.4I	948	I.5	I.6	I00		
	20	0.4I	948	I.2	(3.3	II6)		
	2I	0.4I	948	I.9	(2.3	I03)	2.0	
	22	0.4I	948	2.4	0.5	87		
	23	0.4I	948	2.8	-I.0	76		
к	24	0.4I	948	2.7	-0.8	78		3 Выше 8 Ac. Ниже ясно Океан – 8 б. Болтан
	26	0.87	895	3.I	-6.2	50		4 Выше 7 Ac, ниже ясно океан 8 б.
	29.5	I.87	790	-I.I				5 Выше 8 Ac, ниже ясно океан 8 б.
	33	2.83	700	-4.5				6 Выше 8 Ac, As. Ниже яс Океан – 8 б.
н	37.5	3.89	6II	-I0.6	-25.5	28		7 Выше 9 Ac, As. Ниже я океан – 8 б.
	38	3.89	6II	-II.3				
	39	3.89	6II	- II.5	-24.8	32		
	40	3.89	6II	-II.5	-28.2	24		
	4I	3.89	6II	-I2.3	-28.6	24		
	42	3.89	6II	-II.6				
	43	3.89	6II	-I2.I				
	44	3.89	6II	-II.6				
	45	3.89	6II	-I0.8				
	46	3.89	6II	-I0.8				
	47	3.89	6II	-I0.5				
	48	3.89	6II	-I0.4				
	49	3.89	6II	-I0.5				
	50	3.89	6II	-I0.0				
	5I	3.89	6II	-II.I				
	06.52	3.89	6II	-I0.9				

1	2	3	4	5	6	7	8
06.53	3.89	6II	-I0.6				
54	3.89	6II	-II.4				
55	3.89	6II	-II.8				1 Выше [I0] As ,ниже ясн Океан – 8 б.
56	3.89	6II	-II.6	-32.2	I7		
57	3.89	6II	-II.6				
58	3.89	6II	-II.9	-3I.4	I8		
06.59	3.89	6II	-II.4	-32.4	I7		
07.00	3.89	6II	-II.4	-3I.5	I7		
0I	3.89	6II	-II.5	-3I.I	I8	-I2.2	
02	3.89	6II	-I0.7	-3I.8	I6		
03	3.89	6II	-II.0	-30.7	I8		
04	3.89	6II	-I2.5	-29.6	23		
05	3.89	6II	-II.0	-29.5	20		
06	3.89	6II	-II.4	-28.0	24		
07	3.89	6II	-I3.9	-27.4	3I		
08	3.89	6II	-I3.9	-25.0	38		
09	3.89	6II	-I4.9				
I0	3.89	6II	-I3.9				2 Выше I0 As ,ниже я океан – 6 б.
I2	3.89	6II	-I6.5	-27.2	39		
I3	3.89	6II	-I6.6	-25.8	45		
I4	3.89	6II	-I6.3	-26.9	40		
I5	3.89	6II	-I6.I	-26.3	4I		3 Выше I0 As,ниже 2 Океан – 5 б.
к 07.I6.5	3.89	6II	-I7.2	-22.3	64		4 Выше I0 As,ниже 2 Океан – волнение

Данные самолётного зондирования в атмосфере
(время московское)

13 сентября 1976 г.
Петропавловск

Время	H км	P мм	$t_б$ °C	$T_{т.р.}$ °C	U %	$\bar{t}_{в\,ср}$ °C	Визуальные наблюден
1	2	3	4	5	6	7	8
2-05	0	1003.1	6.6		84		Выше ясно.
2-06.5	0.41	954	3.6	3.2	97		Выше ясно, ниже суш
2-08	0.90	898	1.2	-11.7	37		Выше ясно.
2-10	1.43	840	-2.1	-16.5	32		Выше ясно, ниже ясн холм. поверхность.
2-11.5	1.98	783	-7.0	-17.8	42		Выше ясно, ниже ясн
2-14	2.83	702	-10.6	-24.2	31		-"- -"-
2-17.5	3.87	612	-17.7	-29.7	34		Выше ясно, ниже ясн холм. суша.
2-25.5	3.90	610	-18.4	-31.0	32		Выше ясно, ниже ясн Бухта.
2-37	3.90	610	-17.6	-33.9	23		Выше ясно, ниже ясн Океан 1-2 б.
2-38	3.90	610	-17.6	-35.3	20		
2-39	3.90	610	-17.6	-35.3	20		
2-40	3.90	610	-18.1				
2-41	3.90	610	-18.1	-35.3	21		
2-42	3.90	610	-18.3	-30.9	32		
2-43	3.90	610	-18.0	-34.5	22		
2-44	3.90	610	-18.0	-31.4	30		
2-45	3.90	610	-18.3	-31.3	31		
2-46	3.90	610	-18.5	-31.8	30		
2-47	3.90	610	-18.4	-34.0	24		
2-48	3.90	610	-18.4	-33.7	25		
2-49	3.90	610	-18.4	-34.0	24		
2-50	3.90	610	-18.4	-33.7	25		Выше 5 Ci. Ниже ясн Океан - 2 б.
2-51	3.90	610	-18.4	-33.3	26		
2-52	3.90	610	-18.8	-31.6	32		
2-53	3.90	610	-18.9	-32.1	30		
2-54	3.90	610	-19.0	-32.1	31		
2-55	3.90	610	-19.0	-32.4	30		
2-56	3.90	610	-19.0	-31.9	31		

Key to text page 67 /59.

1. higher than 5 Ci ing, lower clear.
2. Cu ahead. Ocean 3-5 B.
3. Higher than 4 Ci fil. Lower than 6-7 Cu hum. Ocean 6 B.
4. Higher clear, lower 4 Sc, Cu. Ocean 7 B.

Key to text page 68 /60.

1. Higher than 3 Cifil. Lower than 5 Sc, Cu. Ocean - 8 B.
2. Higher than 10 As. Lower than 10 Sc, Cu.
3. Higher than 6 Cifil. Lower than 10 Sc, Cu.
4. Higher than 6 Cifil. Lower than 10 Sc, Cu. Ocean 8-9 B.
5. Higher than 3 Ci, lower than 10 Astrans.

Key to text page 69 /61.

1. Higher than 3 Cc, lower than 9 As, Sc.
2. higher than 6 Cc. Lower than 8 AcAsSc Ocean - 9B.
3. Higher than 4 Cc. Lower than 7 Ac, As Sc.
4. Higher than 4 Cc. Lower than 7 Ac Sc
5. Higher than 4 Cc. Lower than 7 Sc.
6. HrSc. Lower than 2 FrSt
7. Higher than 8 Sc, Cb. Light rain.
8. Higher than 8 Sc, Cb. End of the rain.
9. Higher than 8 Sc, Cb. Beginning of the rain.
10. Higher than 8 Sc. Ocean, turbulent - 9 B.
11. Higher than 8 Sc, Ocean - turbulent 9 B.
12. Higher than 8 Sc, Cb. Oceam 9 B.
13. Higher than 6 Sc. Ocean 8 B.
14. Higher than 8 Sc, Cb. Ocean 9 B.
15. Higher than 8 Sc, Cb. Ocean 9 B. Strong swell.
16. Higher than 6 Sc. Over the ship.
17. Higher than 2 Ci. Lower than 6 Sc.

Key to text page 70 /62.

1. In Cb strong turbulence
2. Higher than 3 Ci. Lower than 8 Cu Cb.
3. Higher than 3 Cc Ciunc. Lower than 6 Cu.
4. Higher than 7 Cc Ci unc . Lower than 4 Cu. Ocean - 8 B.
5. Higher than 6 Cc Ci. Lower than 5 Cu, Ocean 8 B
6. Higher than 1 Ci. Lower than 4 Cu. Ocean 8 B.
7. Higher than 1 Ci. Lower than 4 Cu. Ocean - 8B .
8. Higher clear, lower than 3 Cu, Ocean 8 B.
9. Higher clear. Lower 2 Cu, Ocean - 8 B.

Key to text page 71 /63.

1. Higher 7 Ci unc. Lower 4 Cu. Ocean - 8 B.
2. Higher 4 Ci unc, lower 3 Cu. Ocean, swell - 8B.
3. Higher 1 Ci. Lower 4 Cu. Ocean 8 B.
4. Higher clear. Lower 3 Cu. Ocean - 8 B.
5. Higher clear, Lower 3 Cu, Ocean - 8 B.

Key to text page 72 /64.

1. Higher clear, lower 4 Cu, Ocean - 8 B.
2. Higher clear lower 2 Cu. Ocean - 5 B.
3. Higher and lower clear. Ocean swell - 3 B.

I	2	3	4	5	6	7	8
2-57	3.90	6I0	-I9.I	-3I.9	3I		
2.58	3.90	6I0	-I8.8	-32.5	29		
2-59	3.90	6I0	-I8.8	-32.6	29		
3-00	3.90	6I0	-I8.9	-3I.9	3I		
3-0I	3.90	6I0	-I8.8	-36.0	2I		1 Выше 5 Ciinq .Ниже яс 2 Впереди Al .Океан 3-
3-02	3.90	6I0	-I8.8				
3-03	3.90	6I0	-I9.3	-37.9	I8		
3-04	3.90	6I0	-I9.3	-38.6	I7		
3-05	3.90	6I0	-I9.3	-38.3	I7		
3-06	3.90	6I0	-I9.3	-38.2	I7		
3-07	3.90	6I0	-I9.3				3 Выше 4 Ci fil. Ниже 6-7 Ci hum. Океан 6 б.
3-08	3.90	6I0	-I9.3				
3-09	3.90	6I0	-I9.3				
3-I0	3.90	6I0	-I9.3	-39.I	I6		
3-II	3.90	6I0	-I9.2				
3-I2	3.90	6I0	-I9.3	-39.I	I6		
3-I3	3.90	6I0	-I9.3				
3-I4	3.90	6I0	-I9.4	-39.0	I6		
3-I5	3.90	6I0	-I9.3	-39.0	I6		
3-I6	3.90	6I0	-I9.3				
3-I7	3.90	6I0	-I9.2				
3-I8	3.90	6I0	-I9.2				
3-I9	3.90	6I0	-I9.2				
3-20	3.90	6I0	-I9.I	-38.9	I6		
3-2I	3.90	6I0	-I9.I	-39.6	I5		
3-22	3.90	6I0	-I9.I				
3-23	3.90	6I0	-I9.0				
3-24	3.90	6I0	-I9.0				
3-25	3.90	6I0	-I9.0				4 Выше ясно, ниже. 4 Sc, Cu . Океан 7
3-26	3.90	6I0	-I9.I				
3-27	3.90	6I0	-I9.I				
3-28	3.90	6I0	-I9.I				
3-29	3.90	6I0	-I9.I				
3.30	3.90	6I0	-I9.2				
3-3I	3.90	6I0	-I9.2				

I	2	3	4	5	6	7	8
3-32	3.90	6I0	-I9.2				
3-33	3.90	6I0	-I9.6				
3-34	3.90	6I0	-I9.I				
3-35	3.90	6I0	-I9.I	-28.5	43		
3-36	3.90	6I0	-I9.3	-27.I	50		
3-37	3.90	6I0	-I9.3	-24.3	65		
3-38	3.90	6I0	-I9.0	-28.2	44		1 Выше 3 Cifil .Ниже 5 Cu .Океан 8 б.
3-39	3.90	6I0	-I8.8	-3I.7	3I		
3-40	3.90	6I0	-I9.0	-35.6	22		
3-4I	3.90	6I0	-I8.8	-34.I	25		
3-42	3.90	6I0	-I8.5	-34.3	24		2 Выше IO As .Ниже IO
3-43	3.90	6I0	-I8.4	-28.0	43		
3-44	3.90	6I0	-I8.5	-29.9	36		
3-45	3.90	6I0	-I8.4	-25.I	56		
3-46	3.90	6I0	-I8.2	-23.4	64		
3-47	3.90	6I0	-I8.2	-23.0	66		
3-48	3.90	6I0	-I8.2	-22.3	68		
3-49	3.90	6I0	-I7.6	-22.5	66		
3-50	3.90	6I0	-I7.6	-22.5	66		
3-5I	3.90	6I0	-I7.6	-2I.8	69		
3-52	3.90	6I0	-I7.7	-22.5	66		
3-53	3.90	6I0	-I8.0	-2I.6	74		
3-54	3.90	6I0	-I8.2	-20.4	83		
3-55	3.90	6I0	-I8.2	-20.7	8I		3 Выше 6 Cifil.Ниже I
3-56	3.90	6I0	-I8.2	-20.7	8I		
3-57	3.90	6I0	-I7.6	-2I.3	73		
3-58	3.90	6I0	-I7.5	-20.4	78		4 Выше 6 Cifil . Ниже IO Sc , Cu .Океан 8-
3-59	3.90	6I0	-I7.5	-20.5	77		
4-00	3.90	6I0	-I7.3	-I9.3	84	-I8.5	
4-0I	3.90	6I0	-I7.2	-20.0	79		
4-02	3.90	6I0	-I7.2	-I9.7	8I		
4-03	3.90	6I0	-I7.2	-2I.0	73		
4-04	3.90	6I0	-I7.0	-2I.3	70		
4-05	3.90	6I0	-I7.0	-20.I	77		5 Выше 3 Ci , ниже IO As trans
4-06	3.90	6I0	-I6.6	-I9.I	8I		-"-

	1	2	3	4	5	6	7	8
	4-I9.5	3.90	6I0	-I6.7	-I9.8	77		1 Выше 3 Cc, ниже 9 As
	4-40,5	3.90	6I0	-I7.9	-I9.4	88		2 Выше 6 Cc. Ниже 8 Ac As. Океан – 9 б.
К								
	4-54.5	3.8I	6I7	-I7.5	-20.I	80		3 Выше 4 Cc. Ниже 7 Ac, As
	5-03.5	2.93	693	-I4.I	-I7.4	76		4 Выше 4 Cc. Ниже 7 Ac Sc
	5-07	2.00	782	-I0.4	-II.8	90		5 Выше 4 Cc. Ниже 7 Sc
	5-08	I.79	804	-I0.4	(-8.I	I20)		В 2 Sc
	5-I0.5	I.04	885	-7.2	0.3			6 Н 2 Sc. Ниже 2. Fr St
	5-I8	0.48	950	-I.I	2.8			7 Выше 8 Sc, Cb. Слабы дождь.
Н	5-I9	0.48	950	-I.8	3.6			8 Выше 8 Sc, Cb. Конец дождя.
	5-20	0.48	950	-I.5	3.8			9 Выше 8 Sc, Cb. Начал дождя.
	5-23	0.48	950	-I.I	I.5			10 Выше 8 Sc. Океан, во нение 9 б.
	5-24	0.48	950	-I.3	I.6			
	5-25	0.48	950	-I.3	2.6			
	5-26	0.48	950	-I.4	3.3			
	5-27	0.48	950	-I.I	I.2			
	5-28	0.48	950	-I.I	0.9			
	5-29	0.48	950	-0.8	0.4			
	5-30	0.48	950	-I.2	I.5			11 Выше 8 Sc. Океан – волнение 9 б.
	5-3I	0.48	950	-0.8	I.I			
	5.32	0.48	950	-I.5	2.6			12 Выше 8 Sc, Cb. Океан
	5-42	0.48	950	-0.5	0.I			13 Выше 6 Sc. Океан 8 б
	5-43	0.48	950	-0.5	I.0			
	5-44	0.48	950	-0.5	-0.I			
	5-45	0.48	950	-0.6	-0.4		-0.9	
	5-46	0.48	950	-0.8	I.0			14 Выше 8 Sc, Cb. Океан
	5-47	0.48	950	-0.7	0.2			
	5-48	0.48	950	-0.7	0.6			
	5.49	0.48	950	-0.7	0.6			
	5-50	0.48	950	-0.5	0.2			
	5-5I	0.48	950	-0.6	0.6			
К	5-52	0.48	950	-0.6	0.6			15 Выше 8 Sc, Cb. Океа 9 б. Сильн. болт.
	6-06	0.79	9I4	-I.9	-3.7	87		16 Выше 6 Sc. Над судно
	6-07	I.29	858	-5.2	-7.0	87		17 Выше 2 Ci. Ниже 6 Sc

	1	2	3	4	5	6	7	8
	6-09	I.67	8I8	-7.9	-6.I		1	В Cb Сильная болта
н	6-I6	2.I2	772	-I0.0			2	Выше 3 Ci .Ниже 8 Cu C
	6-I7	2.I2	772	-I0.I				
	6-I8	2.I2	772	-I0.3				
	6.I9	2.I2	772	-I0.7				
	6-20	2.I2	772	-I0.7				
	6-2I	2.I2	772	-I0.6				
	6-22	2.I2	772	-I0.7				
	6-23	2.I2	772	-I0.7				
	6-24	2.I2	772	-II.0				
	6-25	2.I2	772	-II.I			-I0.6	
к	6-26	2.I2	772	-I0.6			3	Выше 3 Cc Ci unc Ниже
	6.29.5	2.88	699	-I2.9			4	Выше 7 Cc Ci unc .Ниже Океан - 8 б.
н	6-34.5	3.89	6I4	-I7.6			5	Выше 6 Cc Ci .Ниже 5 Океан- 8 б.
	6-40	3.89	6I4	-I7.0			6	Выше I Ci. Ниже 4 Cu Океан 8 б.
	6-4I	3.89	6I4	-I6.6				
	6-42	3.89	6I4	-I7.5				
	6-43	3.89	6I4	-I7.8				
	6.44	3.89	6I4	-I8.2	-I7.8			
	6-45	3.89	6I4	-I8.0				
	6-46	3.89	6I4	-I8.3				
	6-47	3.89	6I4	-I8.3				
	6-48	3.89	6I4	-I8.3				
	6-49	3.89	6I4	-I8.2				
к	6-50	3.89	6I4	-I8.3			7	Выше I Ci . Ниже 4 C Океан - 8 б.
	6-53	4.89	537	-23.I			8	Выше ясно, ниже 3 Cu Океан - 8 б.
н	6-57	5.85	470	-32.7			9	Выше ясно. Ниже 2 C Океан - 8 б.
	6-58	5.85	470	-33.I				
	6-59	5.85	470	-33.3				
	7-00	5.85	470	-33.3				
	7-0I	5.85	470	-33.8				
	7-02	5.85	470	-33.2				
	7-03	5.85	470	-32.9			-32.8	
	7-04	5.85	470	-3I.9				

I	2	3	4	5	6	7	8 /63.
7-05	5.85	470	-3I.9				
7-06	5.85	470	-32.3				
К 7-07	5.85	470	-32.3				/ Выше 7Ci inc .Ниже 4 Океан – 8 б.
7-I0.5	5.02	528	-26.5				2 Выше 4Ci inc Ниже 3 Cu Океан, волнен.8 б.
Н 7-I5	3.92	6I3	-I8.3				3 Выше ICi .Ниже 4Cu Океан 8 б.
7-I6	3.92	6I3	-I8.5				
7-I7	3.92	6I3	-I9.0				
7-I8	3.92	6I3	-I9.0				
7-I9	3.92	6I3	-I9.0				
7-20	3.92	6I3	-I9.0				
7-2I	3.92	6I3	-I8.8				
7-22	3.92	6I3	-I8.9				
7-23	3.92	6I3	-I8.9				
7-24	3.92	6I3	-I8.7				
7-24.5	3.92	6I3	-I8.7				4 Выше ясно. Ниже 3 Cu Океан – 8 б.
7-25	3.92	6I3	-I8.7				
7-26	3.92	6I3	-I8.7				
7-27	3.92	6I3	-I8.7				
7-28	3.92	6I3	-I8.7				
7-29	3.92	6I3	-I8.7				
7-30	3.92	6I3	-I8.7				
7-3I	3.92	6I3	-I8.7				
7-32	3.92	6I3	-I8.8				
7-33	3.92	6I3	-I8.8				
7-34	3.92	6I3	-I8.8				5 Выше ясно, ниже 3 Cu Океан – 8 б.
7-35	3.92	6I3	-I8.8				
7-36	3.92	6I3	-I8.8				
7-37	3.92	6I3	-I9.2				
7-38	3.92	6I3	-I8.8				
7-39	3.92	6I3	-I8.8				
7-40	3.92	6I3	-I8.8				
7-4I	3.92	6I3	-I8.9				
7-42	3.92	6I3	-I9.3				
7-43	3.92	6I3	-I9.3				
7-44	3.92	6I3	-I9.3				

1	2	3	4	5	6	7	8
7-45	3.92	6I3	-I9.7				1 Выше ясно, ниже 4 Cu Океан - 8 б.
7-47	3.92	6I3	-I9.7				
7-48	3.92	6I3	-I9.I				
7-49	3.92	6I3	-I9.0				
7-50	3.92	6I3	-I9.0				
7-5I	3.92	6I3	-I9.0				
7-52	3.92	6I3	-I9.I				
7-53	3.92	6I3	-I8.6				
7-54	3.92	6I3	-I8.6				
7-55	3.92	6I3	-I8.6				
7-56	3.92	6I3	-I8.4				
7-57	3.92	6I3	-I8.4				
7-58	3.92	6I3	-I8.6				
7-59	3.92	6I3	-I8.7				
8-00	3.92	6I3	-I8.7				
8-0I	3.92	6I3	-I8.6				2 Выше ясно, ниже 2 Океан - 5 б.
8-06	3.92	6I3	-I8.8	-33.6	26		
8-07	3.92	6I3	-I8.8	-34.2	25		
8-08	3.92	6I3	-I8.8	-32.0	30		
8-09	3.92	6I3	-I8.8	-32.7	28		
8-I0	3.92	6I3	-I9.2	-32.6	30		3 Выше и ниже ясно. Океан, волн. 3 б.
8-II	3.92	6I3	-I8.9	-32.2	30		
8-I2	3.92	6I3	-I9.I	-32.2	30		
8-I3	3.92	6I3	-I9.3	-33.7	27		
8-I4	3.92	6I3	-I9.3	-32.0	3I		
8-I5	3.92	6I3	-I9.5	-30.9	36		
8-I6	3.92	6I3	-I9.5	-30.9	36		
8-I7	3.92	6I3	-I9.5	-30.9	36		
8-I8	3.92	6I3	-I9.3	-30.9	35		
8-I9	3.92	6I3	-I9.3	-3I.4	34		
8-20	3.92	6I3	-I9.8	-30.3	39		
8-2I	3.92	6I3	-I9.8	-33.4	29		
8-22	3.92	6I3	-I9.8	-32.I	33		
8-23	3.92	6I3	-I9.8	-3I.3	35		
8-24	3.92	6I3	-I9.7	-3I.3	35	-I9.I	
8-25	3.92	6I3	-I9.7	-3I.3	35		
8-26	3.92	6I3	-I9.7	-30.6	37		

Key to text page 74 /65.
1. Clear. Ocean swell - 2 B.

Key to text page 75 /66.
1. Table III-1-3
2. Data on Aircraft of the Atmosphere (Moscow Time)
   Yuzhno-Sakhalinsk October 13, 1976
3. Time
4. H, km
5. P, mm
6. visual observations.
7. ravine
8. Lower St. Thick haze.
9. higher clear, lower 10 St.
10. Higher clear, lower 10 St Sc 5 Ac.
11. Higher clear, lower 10 Ac.
12. Higher clear, lower 8 Ac., 10 St, Sc.
13. Higher clear, lower 10 As.
14. Higher clear, lower 10 As.
15. Higher clear, lower 10 As (weak)
16. Higher clear, lower 3 Sc, haze.
17. Higher clear, lower 10 Sc.
18. Higher clear. Ocean, haze.
19. Higher clear, lower 5 Ac. Entered the clouds.

Key to text page 76 /67.
1. Higher clear, lower 10 Ac
2. Higher clear, lower 5 Ac. Border of cloudiness
3. Higher clear; ocean, lower - haze.
4. higher and lower clear. Ocean.

Key to text page 77 /68.
1. Clear
2. Higher clear, lower 5 Ac, Ocean
3. Lower clear, on the Ac side.
4. Higher clear, lower 2 Ac.
5. Lower clear. Ocean, thick haze.
6. Higher 2 Ac, lower clear, Br, thick haze.

Key to text page 78 /69.
1. Higher 2 Ac, lower clear. Surface in thick haze.
2. Clear, lower thick haze.
3. Clear, ocean - 3 B, thick haze, Aer. layer.
4. Clear, ocean - 4 B., haze, turbulence.
5. Clear, ocean 3-4 B.

Key to text page 79 /70.
1. Clear, Ocean - 3 B.
2. Higher 5 Ac, lower clear. Ocean 3-4 B. Gray fog.
3. Higher 5 As, St, lower clear. Ocean, swell - 4 B.

	1	2	3	4	5	6	7	8 /65:
	8-27	3.92	6I3	-I9.7	-3I.4	35		
	8-28	3.92	6I3	-I9.7	-3I.2	36		
	8-29	3.92	6I3	-I9.7	-32.2	32		
	8-30	3.92	6I3	-I9.7	-3I.6	35		
	8-3I	3.92	6I3	-I9.7	-29.6	4I		
	8-32	3.92	6I3	-I9.7	-30.4	38		
	8-33	3.92	6I3	-I9.7	-28.6	45		
К	8-34	3.92	6I3	-I9.7	-30.2	39		Ясно. Океан - волн.

Данные самолётного зондирования атмосферы Table III-1-3

/66.

(время московское)

Южно-Сахалинск

13 октября 1976 г.

Время	Нкм	Рмм	t_b°C	$T_{т.р}$°C	U%	$\bar{t}_{в.сл.}$°C	Визуальные наблюдени
1	2	3	4	5	6	7	8
01.51	0	-	1.1	-0.6	88		7 Ложбина
54	0.49	(941)	3.8	-5.6	50		
56	0.90	894	2.1	-8.9	44		8 Ниже St. Густая дымка
57.5	1.40	840	-1.4	-8.5	58		B St Br St =2.2
01.58,5	1.89	790	-4.4	-14.2	46		
02.00	2.37	743	-8.6	-16.7	52		9 Выше ясно, ниже 10 S
02	2.81	701	-12.9	-19.7	56		-"-
05.5	3.81	614	-19.3	-28.7	43		10 Выше ясно, ниже 10 St
09	4.76	540	-24.1	-43.5	15		11 Выше ясно, ниже 10 Ac
14	5.87	463	-29.2	-47.5	15		12 Выше ясно, ниже 8 Ac, St, Sc
18	6.44	428	-33.4	-50.6	16		13 Выше ясно, ниже 10 As
30	6.44	428	-32.7	-46.6	23		14 Выше ясно, ниже 10 As
02.45	6.44	428	-32.2	-48.8	19		15 Выше ясно, ниже 10 As (о.слабые)
03.00	6.44	428	-31.2			31.8%	Выше ясно, ниже 3 Sc дымка
10	6.44	428	-31.1				17 Выше ясно, ниже 10 S
20	6.44	428	-30.4				-"-
27	5.80	468	-26.3	-42.5	20		18 Выше ясно. Океан, дым
35	5.80	468	-26.0	-42.1	20		-"-
36	5.80	468	-26.0	-42.7	19		
37	5.80	468	-25,5	-44.3	15		
38	5.80	468	-25.7	-45.6	14		
39	5.80	468	-26.2	-45.6	14		
40	5.80	468	-26.1	-44.9	15		
41	5.80	468	-25.7				
42	5.80	468	-25.8				19 Выше ясно, ниже 5 Ac Вошли в обл.
03.43	5.80	468	-25.6				
44	5.80	468	-25.3				
45	5.80	468	-25.2				

	1	2	3	4	5	6	7	8
	03.46	5.80	468	-24.9				
	47	5.80	468	-24.9				
	48	5.80	468	-24.9				
	49	5.80	468	-24.9				
К	50	5.80	468	-24.9			1	Выше ясно, ниже IO/
Н	54	5.80	468	-25.I				-"-
	55	5.80	468	-24.8				
	56	5.80	468	-24.3				
	57	5.80	468	-24.3				
	58	5.80	468	-24.9				
	03.59	5.80	468	-24.9				
	04.00	5.80	468	-25.3				
	0I	5.80	468	-25.4			2	Выше ясно,ниже 5 Ac. Граница облачн.
	02	5.80	468	-25.7				
	03	5.80	468	-26.0				
	04	5.80	468	-26.0				
	05	5.80	468	-26.5				
	06	5.80	468	-27.I	-45.2	I6		
	07	5.80	468	-26.8	-45.2	I6		
	08	5.80	468	-26.3	-44.I	I7		
	09	5.80	468	-26.2	-44.I	I7		
К	I0	5.80	468	-25.9	-44.I	I6	3	Выше ясно;Океан, Ниже дымка
Н	I0.5	5.80	468	-26.2	-44.3	I6	4	Выше и ниже ясно.Оке
	II	5.80	468	-26.3	-44.I	I7		-"-
	I2	5.80	468	-25.9	-42.7	I9		
	I3	5.80	468	-26.I	-42.5	20		
	I4	5.80	468	-25.9	-45.5	I4		
	I5	5.80	468	-26.I	-44.8	I5		
	I6	5.80	468	-26.4	-45.6	I5		
	I7	5.80	468	-26.I	-45.8	I4		
	I8	5.80	468	-26.I				
	I9	5.80	468	-26.2	-44.3	I6		
	20	5.80	468	-26.2	-44.3	I6		
	2I	5.80	468	-26.7	-44.3	I7		
	22	5.80	468	-26.7	-42.9	20		
	04.23	5.80	468	-26.7	-43.5	I9		

I	2	3	4	5	6	7	8
04.24	5.80	468	-26.7	-4I.7	23		
к 25	5.8Ø	468	-26.7	-42.I	22		
н 28	5.80	468	-26.8	-4I.3	24	/	Ясно
29	5.80	468	-26.8	-39.6	29		
30	5.80	468	-26.9	-40.7	26	-25.9	
3I	5.80	468	-26.7	-4I.4	23		
32	5.80	468	-26.7	-43.2	I9		
33	5.80	468	-26.7	-40.I	27		
34	5.80	468	-26.3	-42.8	20		
35	5.80	468	-26.0	-43.5	I8		
36	5.80	468	-26.0	-42.9	I9		
37	5.80	468	-26.0	-44.9	I5		
38	5.80	468	-26.0	-43.3	I8		
39	5.80	468	-26.0	-43.0	I9		
40	5.80	468	-25.8	-44.2	I6		
4I	5.80	468	-25.8	-44.7	I5		
42	5.80	468	-25.8	-42.9	I8		
к 43	5.8Ø	468	-25.8	-42.9	I8	2	Выше ясно, ниже 5 Ac Океан.
48	4.77	538	-I9.2	-36.6	20	3	Ниже ясно, в сторо Ac
52	3.8I	6II	-I2.8	-24.8	36	4	Выше ясно, ниже 2 Ac
н 57	2.79	698	- 9.2	-24.3	28	5	Ниже ясно. Океан, черная дымка.
58	2.79	698	-9.I	-24.5	27		
04.59	2.79	698	-9.9	-26.3	25		
05.00	2.79	698	-I0.4	-24.2	3I		
0I	2.79	698	-I0.9	-23.6	34		
02	2.79	698	-I0.8	-24.0	33		
03	2.79	698	-I2.I	-22.8	40		
04	2.79	698	-I2.8	-2I.5	48		
05	2.79	698	-I3.0	-2I.4	49		
06	2.79	698	-I3.I	-I9.4	59		
07	2.79	698	-I2.6	-I9.2	58	-II.8	
08	2.79	698	-I2.6	-I9.6	56		
09	2.79	698	-I2.6	-I8.I	63		
I0	2.79	698	-I2.9	-I9.8	56		
II	2.79	698	-I3.I	-I8.7	63		
к I2	2.79	698	-I3.I	-I8.9	6I	6	Выше 2 Ac, ниже яс Bz. черн. дымка

I	2	3	4	5	6	7	8 /69.
05.I6	I.83	790	-5.8	-9.3	76		Выше 2 Ac ,ниже ясно Пов-сть в чер.дымке
20	0.87	892	+I.3	-5.7	60		Ясно, ниже черн.дым
н 20.5	0.84	895	2.2	-5.4	57		Ясно,океан - 3 б., черн.дымка,Аэр.слой
2I.5	0.84	895	2.I	-6.6	52		
22.5	0.84	895	2.I	-6.6	52		
23.5	0.84	895	2.I	-6.6	52		
24.5	0.84	895	2.2	-7.0	50		
25.5	0.84	895	2.3	-8.0	46		
26.5	0.84	895	2.2	-7.I	50		
27.5	0.84	895	2.5	-8.4	44		
28.5	0.84	895	2.7	-II.0	36		
29.5	0.84	895	2.6	-I0.9	36		
30.5	0.84	895	2.6	-II.2	35		
3I.5	0.84	895	2.6	-8.0	45		
32.5	0.84	895	2.5	-4.4	59		
33.5	0.84	895	2.5	-8.6	44	2.4	
34.5	0.84	895	2.8	-7.9	45		
к 35.5	0.84	895	2.7	-3.9	62		Ясно, океан - 4 б, дымка, болтанка
н 39	0.3I	956	7.6	-2.3	49		
40	0.3I	956	7.6	0.2	59		
4I	0.3I	956	7.6	0.2	59		
42	0.3I	956	7.6	0.2	59		
43	0.3I	956	7.6	-0.I	58		
44	0.3I	956	7.6	-I.6	52		
45	0.3I	956	7.5	-2.3	50		
46	0.3I	956	7.2	-I.0	56		
47	0.3I	956	7.0	-6.0	39	7.I	
48	0.3I	956	7.0	-4.8	43		
49	0.3I	956	6.9	-6.8	37		
50	0.3I	956	6.9	-6.I	39		
5I	0.3I	956	6.6	-5.8	4I		
52	0.3I	956	6.5	-5.I	43		
53	0.3I	956	6.5	-5.2	43		
к 05.54	0.3I	956	6.5	-5.2	43		Ясно, океан 3-4,

I	2	3	4	5	6	7	8
05.58.I5	0.04	988	7.2	2.0	69		/ Ясно, океан – 3 б.
05.59	0.04	988	7.2	I.7	68		
06.00	0.04	988	7.3	I.3	66		
06.0I	0.04	988	7.3	2.7	73		
02	0.04	988	7.3	0.0	60		
03	0.04	988	7.I	0.0	6I		
04	0.04	988	6.5	-0.6	60		
05	0.04	988	7.4	0.4	6I		
06	0.04	988	7.2	-I.2	55		
07	0.04	988	7.6	-2.0	50	7.6	
08	0.04	988	8.2	-7.9	3I		
09	0.04	988	8.3	-6.3	35		Выше 5 Ac ,ниже ясно Океан 3–4 б.Серая ды
I0	0.04	988	8.2	-9.2	28		
II	0.04	988	8.4	-I0.0	26		
I2	0.04	988	8.4	-I0.8	24		
06.I3.I5	0.04	988	8.4	-8.2	30		Выше 5 As , St , ниже ясно. Океан,волнение

Key to text page 81 /71.

1. Table III-1-3
2. Data on Aircraft Probing of the Atmosphere (Moscow Time)
   Yuzhno-Sakhalinsk October 25, 1976
3. Time
4. H,km
5. P,mm
6. visual observations
7. higher 10 Sc Hr Sc
8. in the clouds
9. in the clouds Br 1.8
10. higher clear, lower 10 Sc
11. Higher clear, lower Sc, turbulence
12. higher clear, lower 10 Sc
13. higher clear, lower 3 Sc. Ocean
14. Higher clear, lower 10 Sc, turbulence
15. higher 2 Cs, lower 10 As, Ac, b
16. higher 1 Cs, lower 10 Ac, Ac. Strong turbulence
17. higher 9 Cs, lower 10 As, turbulence
18. higher 10 Cs, lower 10 As.

Key to text page 82 /72.

1. higher clear, lower 10 As
2. higher 9Cs, 10 As, haze.
3. higher clear, lower 10 Sc
4. higher 8 Cs, lower 10 Ac,As

Key to text page 83 /73.

1. higher 5 Cs, lower 10 Ac.
2. higher 5 Cs, lower 10 Ac
3. higher 7 Cs, lower 10 Ac.
4. higher 5 Ci, lower 10 Ac, Cb.
5. higher clear, lower 10 Sc.
6. higher clear, lower 10 Sc.
7. higher clear, lower 10 Ac.

Key to text page 84 /74.

1. higher clear, lower 10 As
2. higher clear. lower 10 Ac, Cu, cong. Cb-By 8.1
3. higher clear, lower 10 Ac, Cb.
4. higher clear, lower 10 Ac.
5. higher clear, lower 10 As.

Key to text page 85 /75.

1. higher clear, lower 10 As
2. higher clear, lower 10 As.
3. in clouds
4. in clouds Ns.
5. higher 10 Ns. Ocean - 8 B. Violent turbulence.

Key to text page 86 /76.

1. higher 10 Ns. Ocean - 8 B, strong turbulence
2. higher 10 St, haze. Ocean - 8B.
3. In the clouds. Hr cloudiness.

2 Данные самолётного зондирования атмосферы (время московское)

/71.

Южно-Сахалинск

25 октября 1976 г.

3 Время	4 Н км	Р мм	$t_в$ °С	$T_{т.р}$ °С	υ %	$t_{в\,ср.}$ °С	6 Визуальные наблюдени.
04.31	0.	997.2	3.2	3.0	83		7 Выше 10 Sc Hr Sc
33.5	0.46	942	0.0	-1.0	93		
35	1.06	873	-4.4	-6.6	84		8 В облаках.
36.5	1.55	820	-7.0	-11.0	73		9 В облаках. Br 1,8
39	2.48	728	-7.0				10 Выше ясно, ниже 10 Sc
40	2.87	693	-8.2				11 Выше ясно, ниже 10 Sc болтанка.
43	3.91	605	-10.9				12 Выше ясно, ниже 10 Sc
48	4.85	535	-16.8				-"-
51	5.88	465	-25.1				-"-
04.54	6.53	425	-30.9	-46.2	21		-"-
05.10	6.53	425	-28.0				13 Выше ясно, ниже 3 Sc Океан.
25	6.53	425	-26.7	-38.6	32		14 Выше ясно, ниже 10 Sc болтанка.
37	6.67	417	-24.9	-40.5	22		15 Выше 2 Cs, ниже 10 As, Ac
41.5	6.94	402	-26.4	-40.9	24		16 Выше 1 Cs, ниже 10 Ac, Сильная болтанка.
4 49.5	7.03	397	-35.2				17 Выше 9 Cs, ниже 10 As. Болтанка.
50	7.03	397	-25.2				
51	7.03	397	-24.2	-44.4	14		
52	7.03	397	-23.8	-44.5	13		
53	7.03	397	-23.8				
54	7.03	397	-23.9	-34.5	37		
55	7.03	397	-24.3	-35.3	36		18 Выше 10 Cs, ниже 10 As
56	7.03	397	-24.7	-37.2	31		
57	7.03	397	-24.9	-31.9	52		
58	7.03	397	-24.5	-30.8	56		
05.59	7.03	397	-24.8	-36.8	54		
06.00	7.03	397	-24.8	-36.3	34		

1	2	3	4	5	6	7	8 /72.
06.01	7.03	397	-25.3	-33.8	45		
02	7.03	397	-25.2	-34.6	42		
03	7.03	397	-25.2				
04	7.03	397	-34.2				
05	7.03	397	-23.8				
06	7.03	397	-23.2			-24.8	
07	7.03	397	-23.1				
08	7.03	397	-22.9	-41.2	17		
К 09	7.03	397	-23.0	-40.9	18		Выше ясно, ниже 10 Д
Н 39	7.31	382	-26.3				Выше 9 Cs, ниже 10 Д
							↓ дымка
40	7.31	382	-26.2				
41	7.31	382	-26.4				
42	7.31	382	-25.8				
43	7.31	382	-25.7	-41.2	22		
44	7.31	382	-25.8	-39.8	26		
45	7.31	382	-26.4	-41.3	23		
46	7.31	382	-26.6				
47	7.31	382	-26.6				
48	7.31	382	-26.3	-42.3	21		
49	7.31	382	-26.4	-44.0	17		
50	7.31	382	-26.1	-44.0	17		
51	7.31	382	-27.1				
52	7.31	382	-27.4				
53	7.31	382	-27.0				
К 54	7.31	382	-28.0				↓ Выше ясно, ниже 1
Н 57	7.31	382	-28.8				— " —
58	7.31	382	-26.9				
06.59	7.31	382	-27.5				
07.00	7.31	382	-27.0				
01	7.31	382	-27.3				
02	7.31	382	-27.7				↓ Выше 8 Cs, ниже 10 Д
03	7.31	382	-27.8				
04	7.31	382	-27.8				
05	7.31	382	-27.8				
06	7.31	382	-27.3				
07.07	7.31	382	-27.5				

	1	2	3	4	5	6	7	8
	07.08	7.3I	382	-27.3	-4I.2	25		Выше 5 Cs , ниже IO Ac
	09	7.3I	382	-27.3	-39.7	30		
	IO	7.3I	382	-26.4	-42.6	20		
	II	7.3I	382	-25.6	-42.4	I9		
к	I2	7.3I	382	-25.6	-42.0	20		Выше 5 Cs, ниже IO Ac
н	I6	7.3I	382	-26.I	-42.3	20		Выше 7 Cs , ниже IO Ac
	I7	7.3I	382	-26.I	-42.2	20		
	I8	7.3I	382	-25.7	-46.3	I2		
	I9	7.3I	382	-25.7				
	20	7.3I	382	-25.3			-26.9	
	2I	7.3I	382	-25.3				Выше 5 Ci . Ниже IO Ac,
	22	7.3I	382	-26.2				
	23	7.3I	382	-27.8				
	24	7.3I	382	-28.I	-4I.7	26		
	25	7.3I	382	-28.6				
	26	7.3I	382	-28.0				
	27	7.3I	382	-28.0				
	28	7.3I	382	-28.0				
	29	7.3I	382	-28.0				
	30	7.3I	382	-28.I				
к	3I.5	7.3I	382	-28.6				Выше ясно, ниже IO Sc
								By = 7,I
н	38	8.08	343	-37.4				Выше ясно, ниже IO S
	39	8.08	343	-32.5				
	40	8.I8	338	-33.4				
	4I	8.I8	338	-33.4				
	42	8.I8	338	-32.7				
	43	8.I8	338	-32.7				
	44	8.I8	338	-32.9				
	45	8.I8	338	-33.0				
	46	8.I8	338	-33.0				
	46.5	8.I8	338	-32.9	-46.8	23		Выше ясно, ниже IO A
	47	8.I8	338	-32.9	-46.8	23		
	48	8.I8	338	-33.0	-45.3	28		
	49	8.I8	338	-33.0	-46.4	24		
	50	8.I8	338	-32.5	-45.5	26		
	5I	8.I8	338	-32.9	-47.0	23		
	07.52	8.I8	338	-32.9	-45.3	27		

	1	2	3	4	5	6	7	8
к	07.53	8.I8	338	-32.9	-47.6	2I		Выше ясно, ниже IO As
н	58	8.I8	338	-33.5	-46.9	24		
	07.59	8.I8	338	-34.I	-42.8	4I		
	08.00	8.I8	338	-34.I	-45.0	32		
	0I	8.I8	338	-33.8	-45.0	3I		
	02	8.I8	338	-33.8	-46.2	27		
	03	8.I8	338	-33.8	-47.4	24		
	04	8.I8	338	-34.0	-46.5	27		
	05	8.I8	338	-34.0	-46.3	27		
	06	8.I8	338	-34.0	-46.4	27		
	07	8.I8	338	-34.0	-47.6	24		
	08	8.I8	338	-34.0	-49.2	2I		Выше ясно. Ниже IO Ac cong. Cb-By 8,I
	09	8.I8	338	-34.0				
	I0	8.I8	338	-33.8				
	II	8.I8	338	-34.I				
	I2	8.I8	338	-34.8			-33.5	
к	I3	8.I8	338	-34.8				Выше ясно, ниже IO Ac
	I7	7.I7	390	-29.I				Выше ясно, ниже IO Ac
	I9	6.03	456	-23.6	-39.3	23		-"-
	23	5.02	522	-I3.5	-30.2	23		-"-
н	27	4.82	536	-I2.2	-36.6	II		-"-
	28	4.82	536	-I2.6				
	29	4.82	536	-I3.3				
	30	4.82	536	-I3.3	-36.8	I2		
	3I	4.82	536	-I3.3	-34.8	I5		
	32	4.82	536	-I3.0				
	33	4.82	536	-I3.0				
	34	4.82	536	-I3.0				
	35	4.82	536	-I3.3				
	36	4.82	536	-I3.3				
	37	4.82	536	-I3.8				
	38	4.82	536	-I3.7				
	39	4.82	536	-I3.9				
	40	4.82	536	-I3.9				
	4I	4.82	536	-I3.5				
к	08.42	4.82	536	-I3.6				Выше ясно, ниже IO

	1	2	3	4	5	6	7	8 /75.
н	08.44.5	4.82	536	-I3.6				Выше ясно, ниже IO/
	45.5	4.82	536	-I3.I				
	46.5	4.82	536	-I3.2				
	47.5	4.82	536	-I2.9				
	48.5	4.82	536	-I2.9				
	49.5	4.82	536	-I2.9				
	50.5	4.82	536	-I2.9				
	5I.5	4.82	536	-I2.9				
	52.5	4.82	536	-I2.4				
	53.5	4.82	536	-I2.4			-I3.0	
	54.5	4.82	536	-I2.3				
	55.5	4.82	536	-I2.3				
	56.5	4.82	536	-I2.3				
	57.5	4.82	536	-I2.3				
	58.5	4.82	536	-I2.2				
к	08.59.5	4.82	536	-I2.I			N	Выше ясно, ниже IO
	09.02	4.I3	586	-7.I	-32.9	II	3	В облачн.
	06	2.93	683	-4.0	-5.2	9I		-"-
	09	I.98	770	0.5	0.4	99	4	В облаках Ns
	I2	0.98	872	0.I	-I.I	92		-"-
н	I6.5	0.3I	948	2.I	(2.8	I05)	6	Выше IO Ns . Океан 8 б.Сильная болтан
	I7	0.3I	948	2.9	I.8	92		
	I8	0.3I	948	2.9	I.8	92		
	I9	0.3I	948	3.I	I.4	88		
	20	0.3I	948	3.I	0.2	8I		
	2I	0.3I	948	3.4	0.4	8I		
	22	0.3I	948	3.3	0.4	8I		
	23	0.3I	948	3.3	-0.5	76		
	24	0.3I	948	3.3	-0.5	76		
	25	0.3I	948	3.3	-0.6	76		
	26	0.3I	948	3.7	-0.7	73		
	27	0.3I	948	3.7	-I.6	68		
	28	0.3I	948	3.7	-5.7	50		
	29	0.3I	948	3.7	-5.9	49		
	09.30	0.3I	948	3.5	-5.9	50		

I	2	3	4	5	6	7	8
09.3I	0.3I	948	3.3	-6.4	49	3.2	
32	0.3I	948	2.8	-5.I	56		Выше IO Ns. Океан – сильно болтает
33.5	I.3I	837	0.8	-8.5	50		Выше IO St, дымка. Океан – 8 б.
35	I.86	782	-0.4	-0.9	96		В облаках. Hl обла ности
09.38	2.94	682	-5.3	(-4.3	I08)		Bl Ns

Key to text page 88 /77.

1. Table III-1-3 Data on Aircraft Probing of the Atmosphere (Moscow Time) Yuzhno-Sakhalinsk October 30, 1976
3. time
4. H,km
5. P,mm
6. visual observations
7. clear
8. Clear. Shore
9. Clear. Sea
10. Clear. Lower the sea.
11. higher 3 Cs. Clear.
12. Higher 1 Cs, lower 1 Cu.
13. Higher clear. Lower 2 Cu. The Sea.
14. Higher 1 Cs. Lower 3 Cu.
15. Higher 6 Cs. Lower 4 Cu. The sea.
16. Higher 10 Cs. Lower 4 Cu the sea.
17. Higher 10 Cs. Lower 4 Cu the sea.
18. (Crystal)
19. Higher clear, lower Sc cuf
20. Higher 1 Cs, lower 8 Sc, Ac.

Key to text page 89 /78.

1. Higher 3 Cs. Lower 7 Sc.
2. Higher clear. Lower 8 Sc.
3. Higher clear. Lower 10 Ac, As.
4. Higher clear. Lower 10 Sc.
5. Higher clear. Lower 10 Ac.
6. Higher clear, lower 10 As.

Key to text page 90 /79.

1. higher clear, lower 7 Ac.
2. Higher clear, lower 7 Ac.
3. Higher clear, lower 3 Ac, ocean.
4. Higher clear, lower 6 As.
5. Higher clear, lower 10 As.
6. Higher clear. Lower 10 As.
7. Higher clear. Lower 3 Sc.

Key to text page 91

1. Clear
2. Higher clear. Lower 2 Cu sea.
3. Higher clear. Lower 7 Cu sea.
4. Higher clear. Lower 1 Cu sea.
5. Higher clear. Lower 1 Cu sea.
6. Higher clear. Lower 1 Cu sea.
7. Higher clear. Lower 1 Cu.
8. Higher clear. Lower 1 Cu
9. Higher clear. Upper level cloudiness. Lower 1 Cu.
10. Higher, 2 Cu. Lower sea - 7-8 B.
11. Higher 2 Cu. Lower 2 Cu, lower sea - 8 B.
12. Higher 2 Cu. Lower clear.
13. Higher 5 Cu. Lower clear. Ocean - 8 B.
14. Lower limit 5 Cu, Sc, Ac.
15. Higher limit cloudiness. 16. Higher clear. Lower 5 Cu Sc
16. Higher clear. Lower 4 Cu.

Таблица III-1-3

/77.

Данные самолетного зондирования атмосферы
(время московское)

Южно-Сахалинск

30 октября 1976 г.

Время	Н км	Р мм	$t_в$ °С	$T_{т.р.}$ °С	U %	$T_{в.сф.}$ °С	Визуальные наблюде
I	2	3	4	5	6	7	8
04.07	0	989.2	7.8	-4.4	72		
I0	0.48	94I	I.9	-I0.5	39		7 Ясно
II.5	0.96	887	-2.6	-I2.5	46		8 Ясно. Берег.
I4	I.92	787	-9.7	-I8.8	47		9 Ясно. Море.
I7	2.9I	695	-I3.6				10 Ясно. Ниже море.
20	3.97	609	-I3.7				11 Выше 3 Cs . Ясно
24	4.94	539	-20.9				12 Выше I Cs . Ниже I Cu
28.5	5.89	479	-29.5	-43.3	25		13 Выше ясно. Ниже 2 Cu Море.
35	6.36	45I	-34.2	-5I.6	I5		14 Выше I Cs . Ниже 3 Cu
04.50	6.36	45I	-33.8	-54.7	I0		15 Выше 6 Cs . Ниже 4 Cu Море.
05.05	6.36	45I	-34.0	-50.8	I6		16 Выше I0 Cs . Ниже 4 Cu море
I0	6.36	45I	-33.7	-4I.4	45		17 Выше I0 Cs . Ниже 4 Cu море
I8.5	5.82	483	-33.3	-37.7	66		h Cb
20	5.79	485	-30.I	-38.9	42		h Cb 18 (кристал.
2I	5.79	485	-29.4	-40.4	33		
22	5.79	485	-29.4	-42.0	28		
23	5.79	485	-29.I	-43.5	23		19 Выше ясно, ниже Sc Cu
24	5.79	485	-29.6	-42.4	28		
25	5.79	485	-29.5	-42.6	27		
26	5.79	485	-29.6	-43.0	26		
27	5.79	485	-29.I				
28	5.79	485	-28.9				
29	5.79	485	-28.9	-46.I	I7		
30	5.79	485	-28.8				
3I	5.79	485	-28.3	-49.4	II		20 Выше I Cs , ниже 8 Sc,
32	5.79	485	-28.3				
05.33	5.79	485	-27.9				

1	2	3	4	5	6	7	8
05.34	5.79	485	-27.9				
35	5.79	485	-27.9				
36	5.79	485	-27.8				
37	5.79	485	-27.6				
38	5.79	485	-27.7				
39	5.79	485	-27.7	-47.0	I4		
40	5.79	485	-28.I	-47.2	I4		
4I	5.79	485	-28.5				
К 42	5.79	485	-28.7				/ Выше 3Cs. Ниже 7Sc
Н 44.5	5.76	487	-29.2	-4I.7	28		2 Выше ясно. Ниже 8Sc
45.5	5.76	487	-29.2	-44.8	20		
46.5	5.76	487	-30.8	-43.I	28		
47.5	5.76	487	-30.4				
48.5	5.76	487	-30.8	-47.6	I7		
49.5	5.76	487	-30.8				
50.5	5.76	487	-30.8				
5I	5.76	487	-3I.2				3 Выше ясно. Ниже IO/
5I.5	5.76	487	-3I.2				
52.5	5.76	487	-3I.0				
53.5	5.76	487	-30.5				
54.5	5.76	487	-30.4				
55.5	5.76	487	-30.4	-48.2	I6		
56.5	5.76	487	-30.4	-49.I	I5		
57.5	5.76	487	-3I.0	-47.0	I9		
58.5	5.76	487	-3I.4	-45.I	24		4
К 05.59.5	5.76	487	-3I.I	-46.4	20		Выше ясно. Ниже IO
Н 06.03	5.76	487	-3I.6	-44.I	28		5 Выше ясно. Ниже IO
04	5.76	487	-3I.3	-48.6	I7		
05	5.76	487	-3I.I	-49.4	I5		
07	5.76	487	-3I.0	-5I.I	I2		
08	5.76	487	-30.7				
09	5.76	487	-30.6				
I0	5.76	487	-30.8	-50.2	I3		
II	5.76	487	-30.8				6 Выше ясно, ниже IO
I2	5.76	487	-29.9	-45.5	20		
06.I3	5.76	487	-29.8	-45.I	2I		

1	2	3	4	5	6	7	8
06.14	5.76	487	-29.3	-45.1	20		
15	5.76	487	-29.4	-45.5	19	-29.7	
16	5.76	487	-28.8				
17	5.76	487	-28.5	-49.0	13		
К 18	5.76	487	-28.5	-48.8	13		1 Выше ясно,ниже 7А
Н 22	4.93	540	-21.5	-40.6	16		2 Выше ясно,ниже 7А
27	3.86	617	-13.3	-10.9	21		Выше ясно,ниже 3
							3 океан
28	3.86	617	-13.5	-31.8	20		
29	3.86	617	-13.5	-34.7	15		
30	3.86	617	-13.6	-32.6	19		
31	3.86	617	-15.0	-31.4	23		
32	3.86	617	-15.0	-33.5	19		
33	3.86	617	-15.0	-32.4	21		
34	3.86	617	-14.5	-33.2	19		
35	3.86	617	-13.2				4 Выше ясно. Ниже 6
36	3.86	617	-12.6				
37	3.86	617	-12.6				
38	3.86	617	-12.8				
39	3.86	617	-13.2				
40	3.86	617	-13.4				
41	3.86	617	-14.0				
К 42	3.86	617	-14.0	-32.3	20		5 Выше ясно,ниже II
Н 06.56	3.86	617	-13.4				6 Выше ясно.Ниже II
57	3.86	617	-13.4				
58	3.86	617	-13.1				
06.59	3.86	617	-13.8	-30.8	22		
07.00	3.86	617	-14.2	-29.9	25		
01	3.86	617	-14.2	-31.2	22		
02	3.86	617	-14.2	-30.3	24		
03	3.86	617	-14.2	-30.2	24		
04	3.86	617	-13.6	-31.7	20		
05	3.86	617	-13.6	-31.1	21		
06	3.86	617	-13.5	-31.0	21		
07	3.86	617	-13.1	-31.6	20		7
07.5	3.86	617	-13.4	-30.2	23	-13.6	Выше ясно. Ниже 3
07.08	3.86	617	-13.4	-30.2	23		

1	2	3	4	5	6	7	8 /80.
07.09	3.86	617	-13.4	-29.5	24		
10	3.86	617	-13.4	-29.6	24		
к 11	3.86	617	-14.0	-29.9	25		1 Ясно.
17.5	3.85	617	-14.1	-33.5	18		2 Выше ясно. Ниже 2 Cu море
27	3.84	617	-15.3	-30.7	26		3 Выше ясно. Ниже 7 Cu море
32	3.85	617	-13.9	-34.2	16		4 Выше ясно. Ниже 1 Cu море
41	3.87	617	-12.6	-31.6	19		5 Выше ясно. Ниже 1 Cu море
44.5	3.86	617	-13.1	-30.2	22		6 Выше ясно. Ниже 1 Cu море
07.47	3.87	617	-13.0	-30.2	22		7 Выше ясно. Ниже 1 Cu
08.02	2.95	692	-9.5	-20.6	40		8 Выше ясно. Ниже 1 Cu
05	1.95	784	-8.9	-15.9	57		9 Выше ясно. ВУ обл. Ниже 1 Cu
08	0.99	884	-4.5	-5.9	89		10 Выше 2 Cu. Ниже море 7-8 б.
н 11	0.39	953	3.2	-4.4	57		11 Выше 2 Cu. Ниже море
12	0.39	953	2.4	-2.6	70		
13	0.39	953	2.4	-3.5	65		
14	0.39	953	2.4	-4.3	61		
15	0.39	953	3.0	-4.2	59		
16	0.39	953	3.0	-3.5	62		
17	0.39	953	3.0	-3.1	64		12 Выше 2 Cu. Ниже ясно
18	0.39	953	2.6	-2.0	72		
19	0.39	953	2.5	-1.1	77		
20	0.39	953	2.6	-0.4	80		
21	0.39	953	2.6	-1.2	76	2.7	
22	0.39	953	2.6	-0.4	80		
23	0.39	953	2.6	-0.2	82		
24	0.39	953	2.6	0.6	87		
25	0.39	953	2.6	1.6	93		
к 26	0.39	953	3.2	-0.1	79		13 Выше 5 Cu. Ниже ясно Океан 8 б.
27	0.68	919	1.4	-1.2	83		14 НГ обл. 5 Cu, Sc, A
29	1.35	844	-2.9	-8.0	68		15 ВГ обл.
30.5	1.94	785	-6.7	-14.4	54		16 Выше ясно. Ниже 5 Cu
08.32.5	2.97	690	-7.2	-22.0	29		17 Выше ясно. Ниже 4 C

Key to text page 93

/81.

1. clear
2. Clear. Lower ocean.
3. Clear. Lower 2 Cu. Ocean
4. Clear. Lower 7 Sc. Ocean.
5. Higher clear. Lower 10 Sc.

	1	2	3	4	5	6	7	8
	08.35	3.99	607	-II.8	-29.4	22		1 Ясно
	37	4.97	538	-I9.3				2 Ясно. Ниже океан
Н	39.5	5.80	485	-27.6				3 Ясно. Ниже 2Cu.Ок
	40.5	5.80	485	-27.7				
	4I.5	5.80	485	-28.2				
	42.5	5.80	485	-28.8				
	43.5	5.80	485	-27.0				
	44.5	5.80	485	-26.8				
	55.5	5.80	485	-28.3	-40.3	30		
	56.5	5.80	485	-28.I	-43.I	22		
	57.5	5.80	485	-28.7	-43.3	23		
	58.5	5.80	485	-29.I	-42.2	27		
	08.59.5	5.80	485	-29.I				
	09.00	5.80	485	-29.I				4 Ясно.Ниже 7Sc .Оке
	00.5	5.80	485	-28.5				
	0I.5	5.80	485	-29.I	-49.5	I2		
	02.5	5.80	485	-28.7	-46.9	I5		
	03.5	5.80	485	-28.7	-50.3	I0		
	04.5	5.80	485	-29.I	-50.2	II		
	05.5	5.80	485	-29.4	-49.3	I3		
	06.5	5.80	485	-29.4	-48.7	I4	-28.9	
	07.5	5.80	485	-29.I	-39.5	36		
	08.5	5.80	485	-28.8				
	09.5	5.80	485	-28.8				
	I0.5	5.80	485	-29.0				
	II.5	5.80	485	-29.9				
	I2.5	5.80	485	-30.4				
	I3.5	5.80	485	-3I.I				
	I4.5	5.80	485	-28.9				
	I5.5	5.80	485	-29.8				
К	09.I6.5	5.80	485	-28.9				5 Выше ясно. Ниже I

III-2 Data on Observations from On Board the Scientific Research Ship "Akademik Korolev" /82.

Chapter III. Observations from On Board the Scientific Research Ship "Akademik Korolev" /83.

III.2.1. Aerosynoptic Characteristics of the Atmospheric processes over the Northern Region of the Pacific Ocean. (August-November 1976).

This period was characterized by the autumnal restructuring of the thermobaric field at the earth's surface and at altitudes: the northern Pacific Ocean anticyclone, weakening somewhat, shifted to the east, the Aleutian depression began to form which, by the end of the period, occupied its normal position with a pressure at the center of 998 mbar. In August and September at a level of 500 mbar a quick shift took place of the high ravines and crests in an easterly direction, but the thermobaric pressure was already determined in October, characteristic of winter: the ravines over the Far East and the Aleutian Islands, separated by crevices, were facing Kamchatka.

An analysis of the meteorological conditions and atmospheric processes was conducted for each month. Most attnetion was given to the operations in the north (49° north latitutde, 162° east longitude) and the south (43° north latitude, 148° east longitude) test sites.

In August the synoptic processes over the Far Eastern territory adjacent to the seas and the northern section of the Pacific Ocean were typical for this time of the year. The basic factor determining the weather in this region of the globe is the northern Pacific Ocean anticyclone. It occupied almost the entire northern section of the ocean. Its center with a pressure of 1025 mbar was located at approximately 35° north latitude, 145° west longitude, and its wedge extended far to the west (figure 1).

The structure of the high thermobaric field was characterized by quick shifting to the est of poorly developed ravines and wedges. The

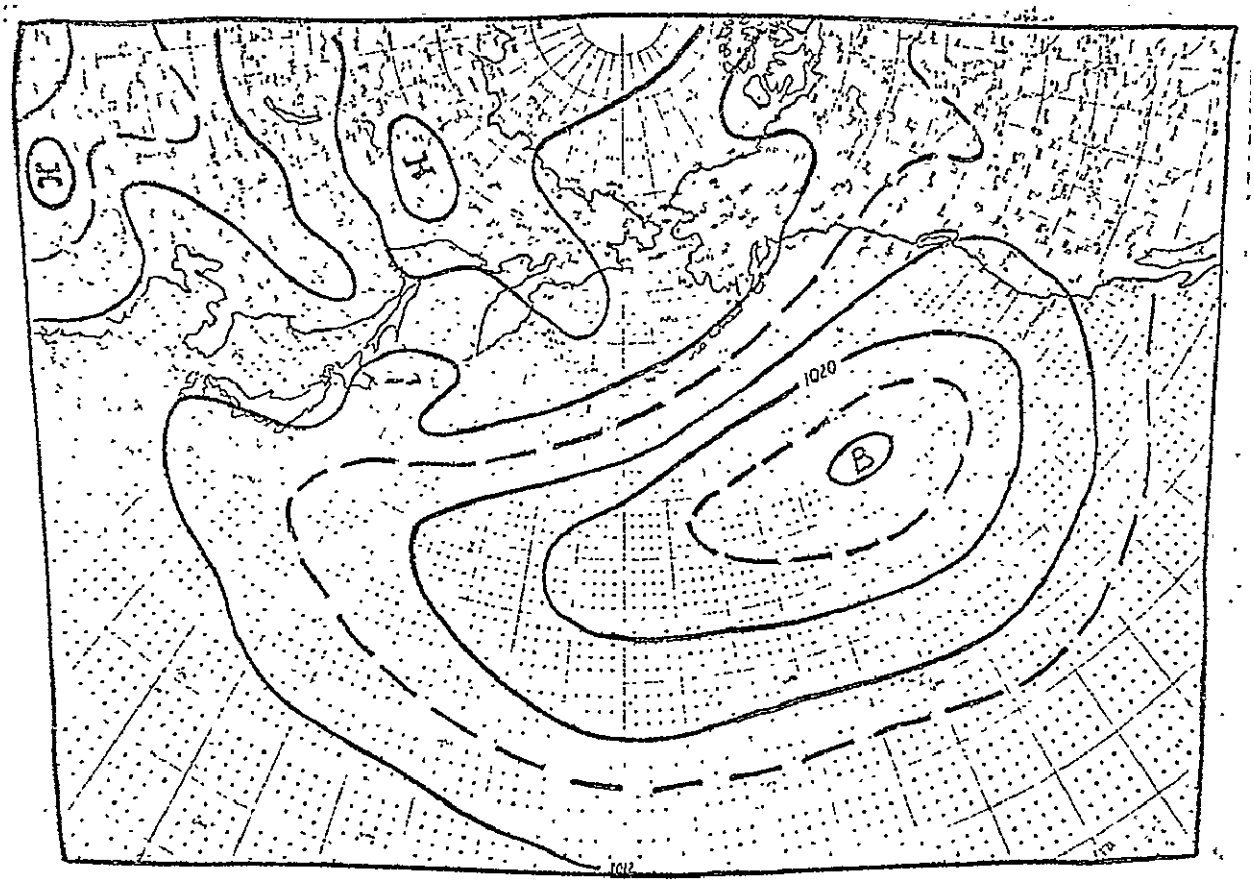

Figure 1. Map of the average monthly ground pressure, August /84.

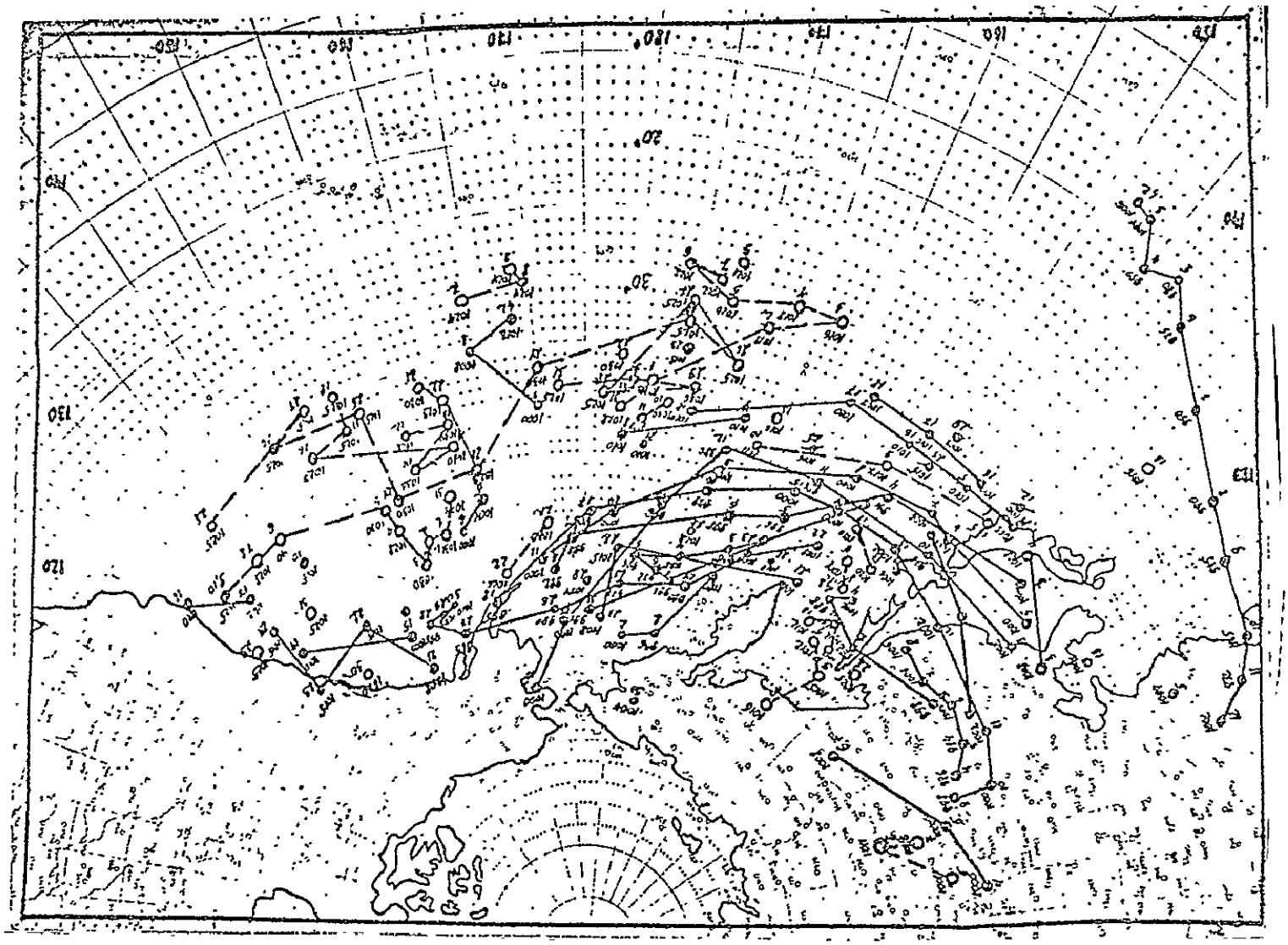

Figure 2. Compiled cinematographic map of the cyclones and anti- /85.
cyclones, August.

occurrence and further depression of these cyclones took place on the polar front (figure 2), the geographic location of which changed significantly, however did not exceed the limits 30-50° north latitude. The location of the polar front adjusted well to the high frontal zone which was expressed clearly enough on the baric topography maps 500 and 300 mbar, in the form of thickening of the isohypse and regions of maximum wind velocities. /86.

In accordance with this condition, the ship from August 4-19, while cutting across along the 20° north latitude, was located on the southeastern periphery of the northern Pacific Ocean anticyclone. There was clear, sunny weather, with weak easterly winds. Brief deterioration of the weather conditions at the beginning of this period was connected with the presence of typhoon Billy in the operation area (figure 3.).

July 31 in the region of 8° north latitude, 154° west longitude a tropical depression formed, outlined with one isobar with a pressure at the center of 1004 mbar. During the following days this depression shifted to the northwest and began to intensify significantly, developing into a cyclone called Billy. August 6 the center of the typhoon passed over the southern region of the operation area, intensifying the northeasterly wind to 21 m/sec. and yielding significant precipitqtion. The typhoon reached its maximum development on August 8, after the ship had exited the area where it raged. The pressure at its center decreased to 920 mbar, and the wind speed increased to 50 m/sec. During the following days the typhoon began to fill up, and continued to shift to the northwest, it filled up over the southeastern regions of China.

In the troposphere, weak (5-15 m/sec) variable winds were observed and only in the lower stratosphere was there a constant easterly transfer with wind speeds to 20-30 m/sec. At altitudes of 1-3 km weak inversions were noted sometimes. The tropical tropopause was located at an altitude of 15-16 km, the air temperature at this level decreased to -80° (figure 4).

On August 20-29, during the transfer from the port of Honolulu to the northern testing site, the ship crossed a polar front which was located at that time at 42° north latitude (figure 5). The wind speed at an altitude of 10-11 km reached 50-60 m/sec. At the ground layer, when crossing the front, one observed an intensification of the winds, strong stratus-cumulus clouds, strong rain.

In September the zonal processes were prevalent, and we observed frequent shifting of the western anticyclones in the 30-50° north latitude zone. Activizarion of the cyclonic activity took place during periods when the high wedge was located over Kamchatka, and the high ravine was shifting from the Western Siberian regions to Yakutia and the Amur Basin. If this ravine penetrated far into the south (30-35° north latitude), then deep cyclones would pass through the Okhotsk Sea and the Sea of Japan into the Bering Sea (figure 6).

As a result of activization of the cyclonic activity, a depression /91. began to form over the Aleutian Isalnds. On the average monthly map the pressure at the center of the Aleutian depression was already 1000 mbar, which is 8 mbar lower than the average value for several years (figure 7).

The period of operations in the northern testing site area (August 29 - September 13) can be divided into three time sections according to the structure of the baric field: August 28-31, September 1-9,

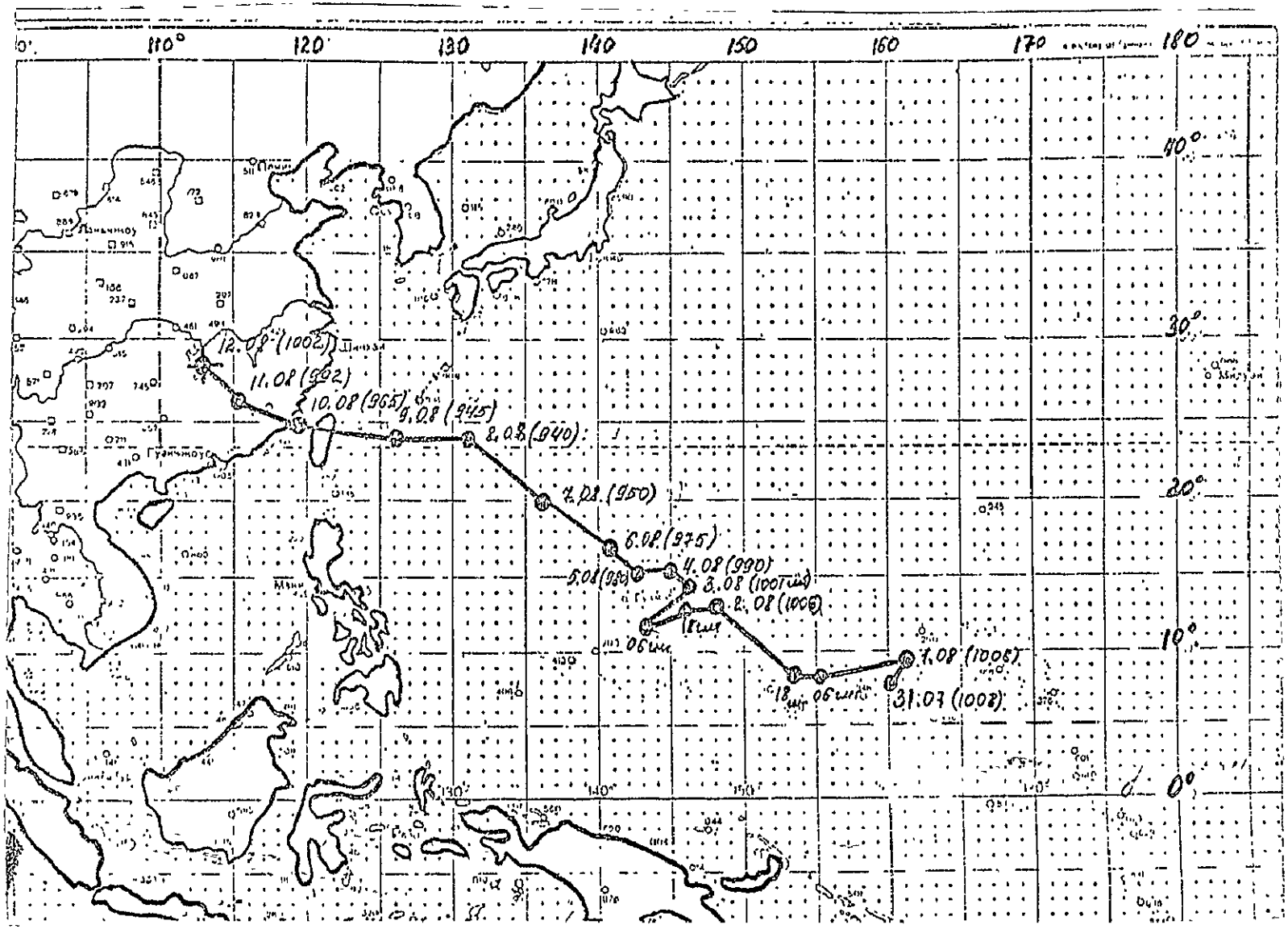

Figure 3. Movement of Typhoon Billy.

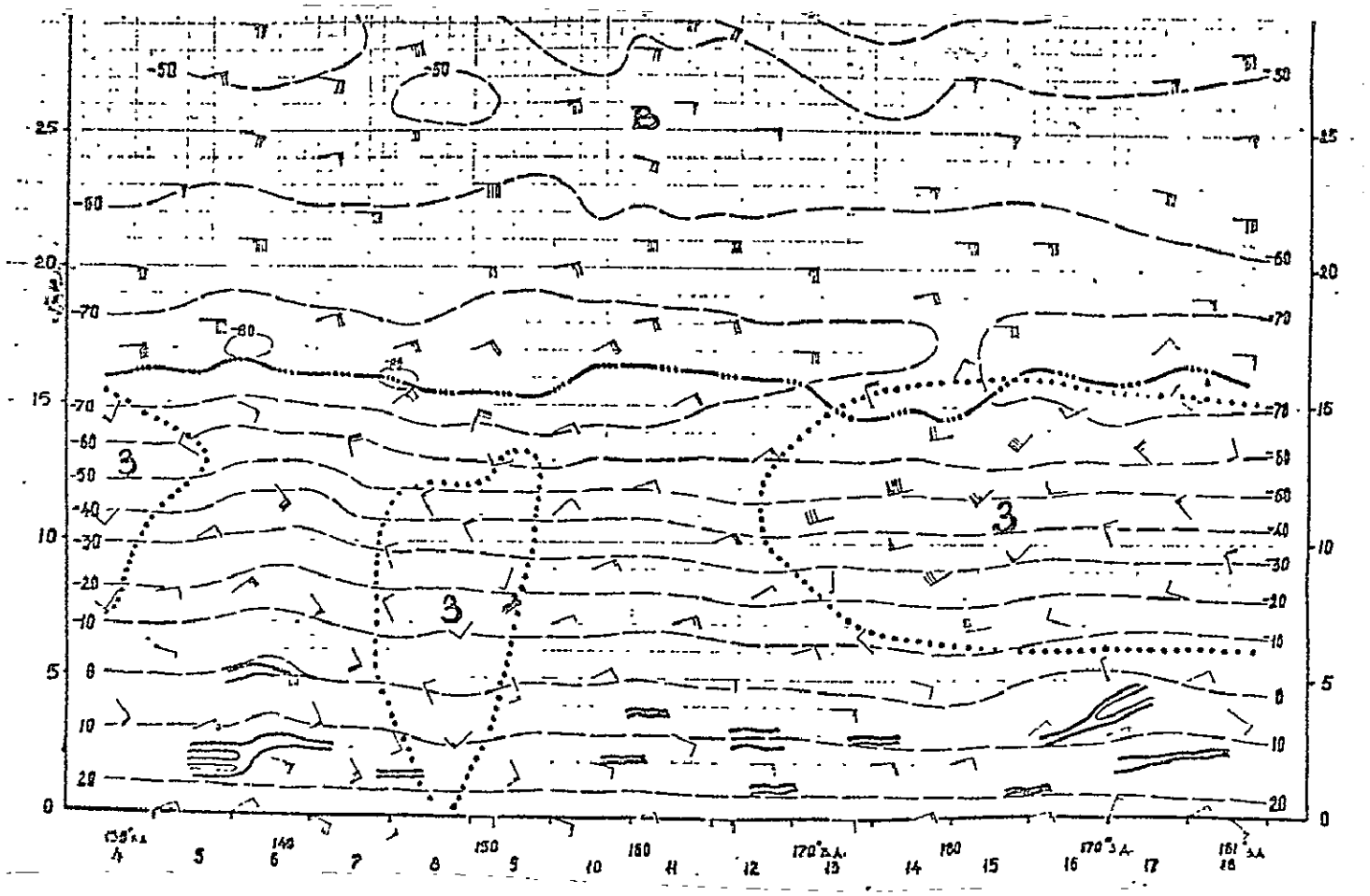

Figure 4. Three-dimensional cross-section of the atmosphere along the 20° north latitude. Pacific Ocean. Conventional signs. /88.

1 - isotherm; 2 - tropopause; 3 - border of the frontal zones and the inhibiting layers; 4 - border between the westerly and easterly winds; 5 - easterly wind 5 m/sec; 6 - westerly wind 25 m/sec

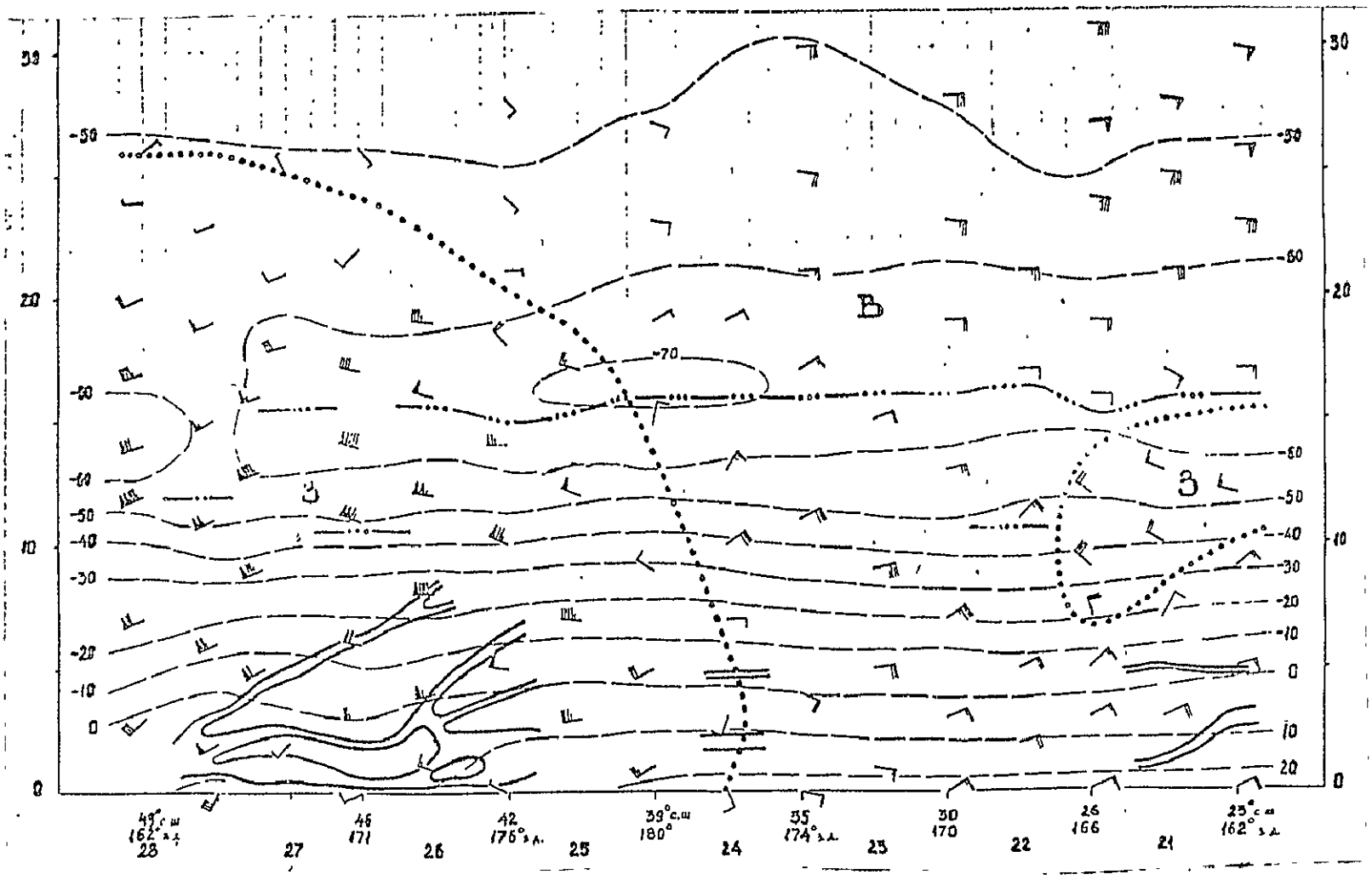

Figure 5. Three-dimensional cross-section of the atmosphere from the port of Honolulu to the northern testing site. Pacific Ocean.

/89.

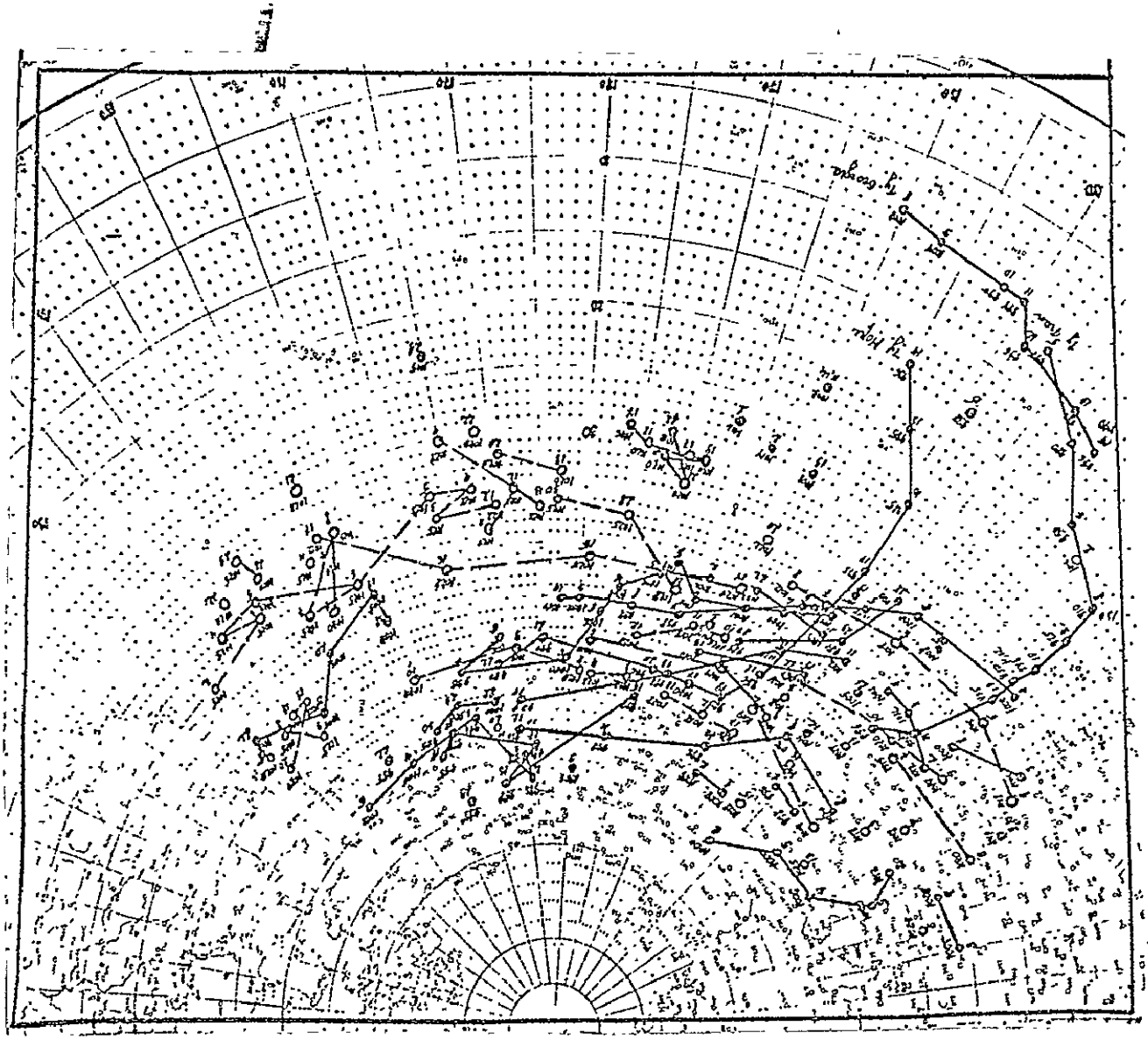

Figure 6. Composite cinematographic map of the centers of the the cyclones and the anticyclones. September. /90.

September 10-13.

August 28-31 the high wedge was located over the Amur Region and over the Khabarovsk Krai (administrative region). The cyclone was stationary over Kamchatka, and its ravine extended far to the south. The cyclones shifted along two paths: to the north of the testing site along the 65° north latitude and to the south - from the Japan Isalnds to the Bering Sea.

This structure of the high baric field corresponded to the following synoptic situation. August 29-30 to the north of the testing site passed the cyclone with a pressure at its center of 1000 mbar, connected with the polar front. This cyclone did not cause an intensification of the winds, the winds only shifted from a southerly direction in the forward section of the cyclone to a westerly direction, and then to a northwesterly direction in the rear section. There was fog with the southerly and northerly winds. As the polar front passed there was precipitation (figure 8).

The vertical structure of the field of the temperature was was characterized by the presence of superadiabatic gradients in the lower three-hundred-meter layer (from 1.10 to 1.50 degrees per 100 meters) and by an inversion in the adjacent layer with a thickness from 200 to 1000 meters (figure 9).

In the troposphere the westerly and southwesterly winds prevailed, resulting from the southeastern periphery of the cyclone. At an altitude of 9-10 km the wind speed reached 60 m/sec.

In connection with the flow of the air masses from the south, the temperature rose significantly at all levels of the troposphere. The relative humidity was increased (70-90%) only up to an altitude of 2-3 km.

The entire middle and upper troposphere was an area with humidity (20-30%) and only in the forward part of the cyclone did the humid air extend to the tropopause (11-12 km).

From September 1-9 there was a restructuring of the baric field. The cyclone from Kamchatka shifted to the northeast, and the wedge, weakening, shifted from the Amur Region to Kamchatka. The flows became wider. The cyclones from the regions of China and Japan passed to the south of the testing sites to the eastern part of the Bering Sea, and the high pressure nuclei passed from the mainland to the Sea of Okhotsk and to the northwestern part of the Pacific Ocean.

During this period the operations were conducted under a high pressure area. Weak south and southwesterly winds prevailed.

In the troposphere we also observed variable weak winds. /95. The presence of inversions at the water level (200-500 meters) with southwesterly winds created favorable conditions for fog and drizzle formation. Above the inhibiting layer, the relative air humidity decreased sharply to 20-30%.

During the period from September 10-13, the high thermobaric field was characterized by the presence of a high ravine, moving from Chukotka to Kamchatka and the Amur Region.

On September, moving in the front part of this ravine, a cyclone emerged from the northern operations area with a pressure at the center of 996 mbar. This caused an acute rise in the air temperature in the troposhpere on the average of 10°, an increase in the level of the troposphere from 12-15 km and

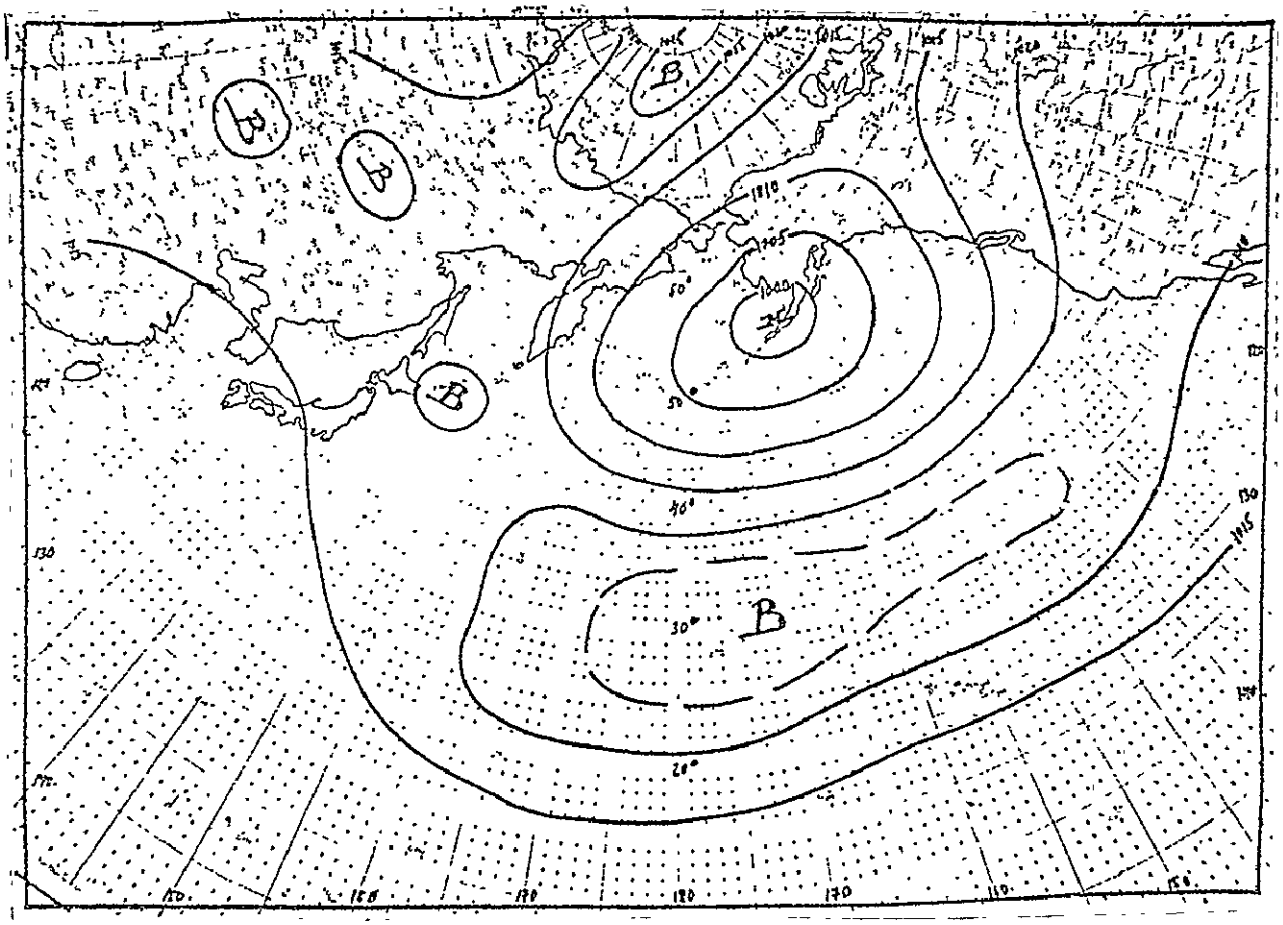

Figure 7. Map of the average monthly ground pressure. September. /92.

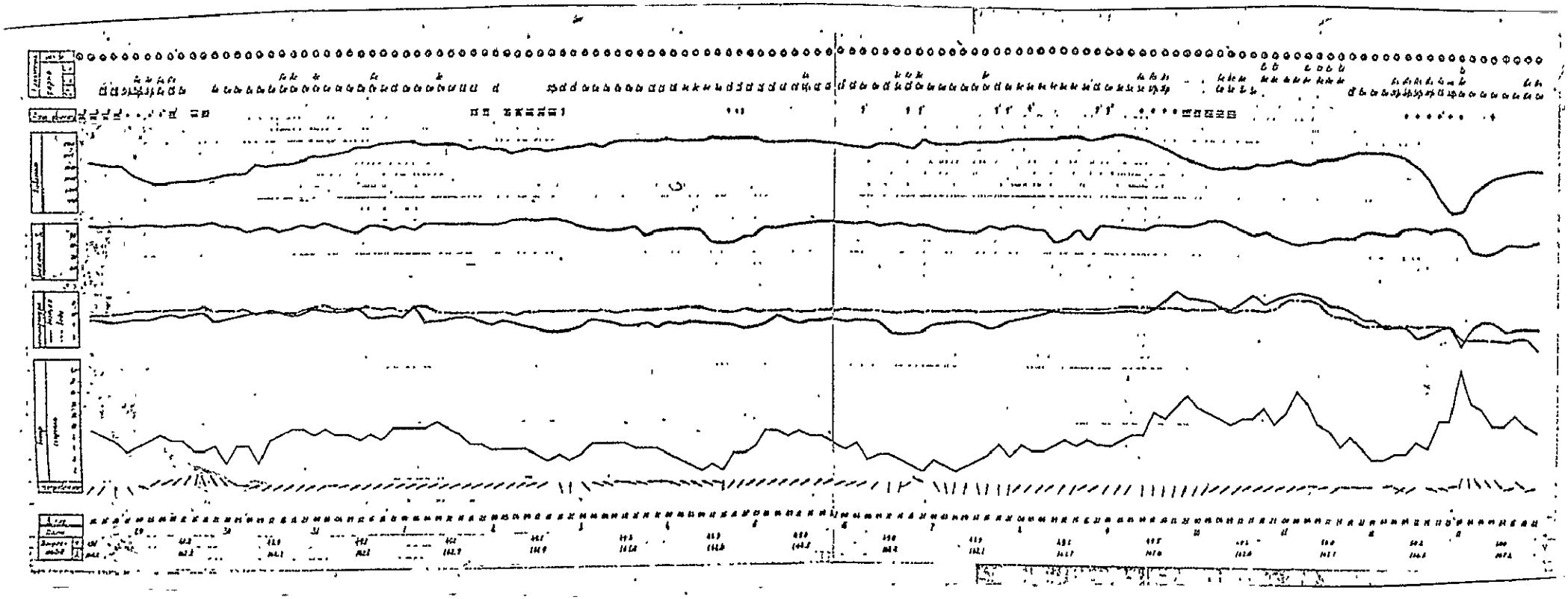

Figure 8. Movement of the meteorological elements from August 29 to September 13. /93.

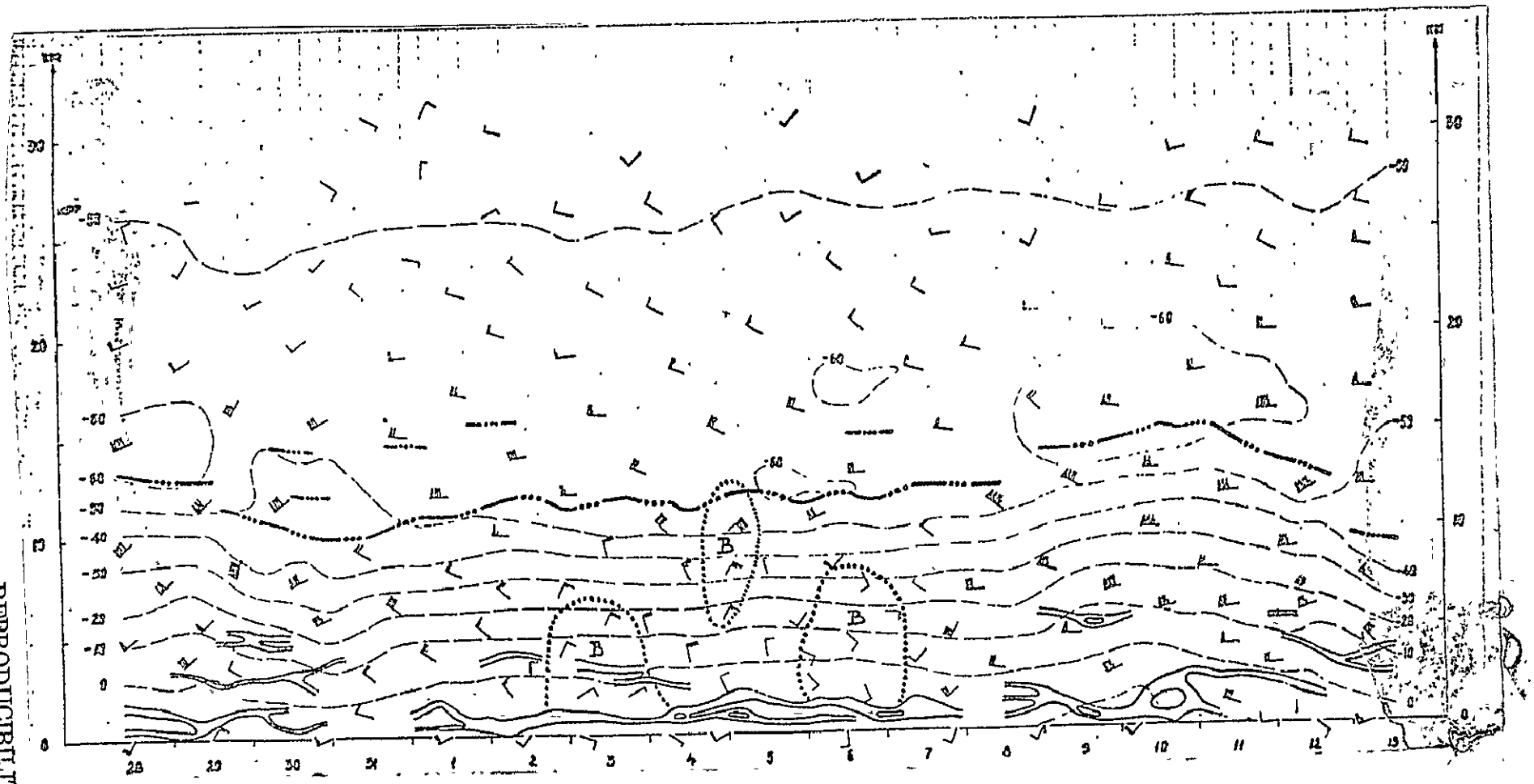

Figure 9. Time cross-section of the atmosphere. Northern testing site (49° north latitude, 162° east longitude). Pacific Ocean. /94.

and an intensification of the western stream of air up to 75 m/sec.

Still another cyclone emerged and entered the operation area on September 12-13. Its center passed through the test site. At ground level the wind shifted from easterly to northerly, and then to westerly. The wind in this cyclone increased to 20 m/sec, there was severe swell, rain and fog. At the rear of this cyclone the air temperature in the troposphere decreased to 20°, the level of the troposphere decreased at the same time from 15 to 9 km. The air temperatyre in the tropopause increased to -50°.

Along the 50° north latitude cross-section (September 13-21) the weather conditions were determined by the southern periphery of the Aleutian depression which was constantly filled out by the frontal cyclones and regenerated. It was easily traced at altitudes. Along the path of the ship westerly winds prevailed from 10-12 m/sec. A frontal cyclone passed through the path of the ship on September 20 which caused a brief increase in the wind speed to 21 m/sec and caused plentiful precipitation.

With the emergence of this cyclone, in the troposphere we observed southeasterly winds with a speed of 45 m/sec and a severe increase in temperature on the average of 10-15°. On the remaining journey the westeasterly transfer was maintained with speeds of 25-60 m/sec (figure 10).

September 16-17, crossing the polar front, the level of the

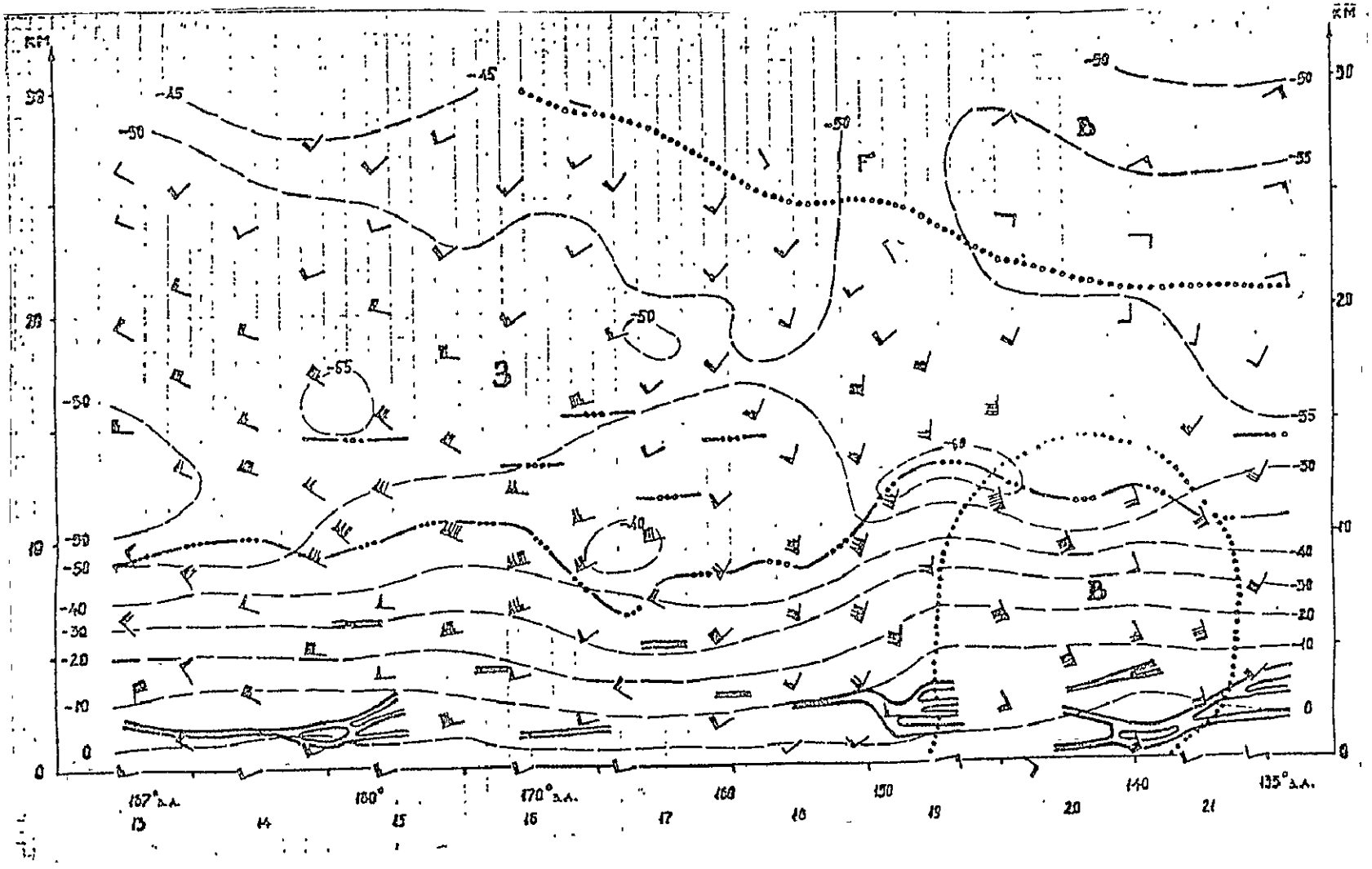

Figure 10. Three-dimensional time cross-section of the atmosphere along the 50° north latitude. Pacific Ocean. /96.

tropopause was at its lowest point (7 km) for the entire period. The temperature at the level of the tropopause increase to -40°.

The characteristics of the synoptic processes over the northern section of the Pacific Ocean in October were significnatly different from the average processes for a many year period. A particularity of these synoptic processes for this region is the exceptionally active cyclonic activity in the arctic and polar fronts, the irregular distribution and intensity of the /97. main centers of activity of the atmosphere: of the northern Pacific Ocean and Siberian anticylcones and of the Aleutian depression. On the average monthly pressure map (figure 11) one sees that the Sea of Okhotsk and the Bering Sea are affected by two of the central low pressure areas. One center is located over the Aleutian islands and the other is over the Sea of Okhotsk. The pressure irregularities were as follows in these centers: -2 and -4 mbar, respectively. The center of the Aleutian depression was located at 10° to the west of its usual location. The Siberian anticyclone occupied its usual position, but was weakly developed, pressure irregularity at its center was -4 mbar, and its wedge extended in a northeasterly direction into the Chukotka region where the pressure orregularity was +10 mbar. The location of the northern Pacific Ocean anticyclone remained unchanged, but the pressure at its center was 2 mbar higher than the average monthly pressure.

The trip from the port of Vancouver to the southern testing

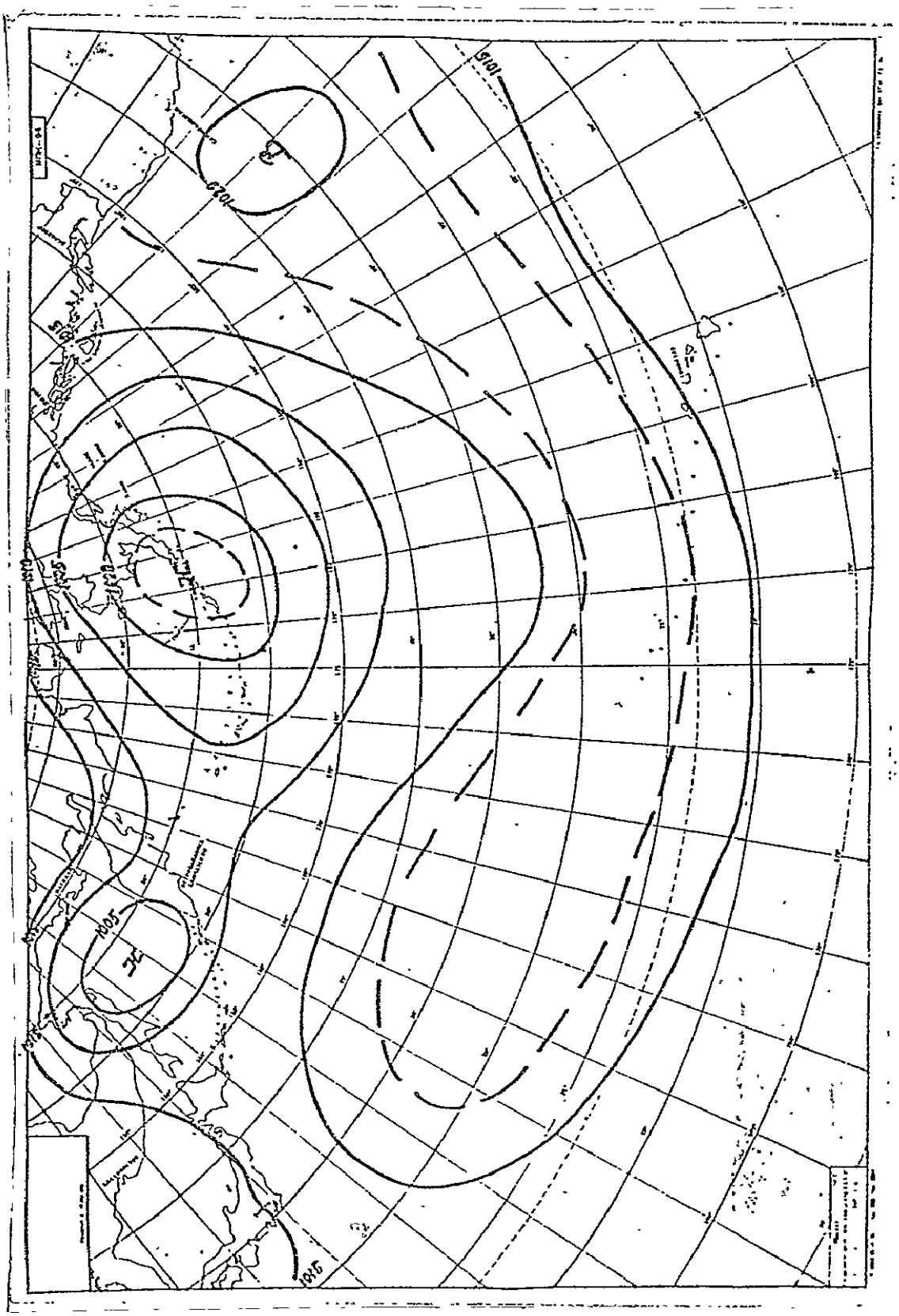

Figure 11. Map of the average monthly ground pressure. October.

site (September 27-October 13) was characterized by a high cyclone over the Aleutian islands and a ravine over Kamchatka. The movement of baric formations passed along the southern periphery of the Aleutian depression, i.e. along 40-45° north latitude to the east. At the end of the period the cyclones and the anticyclones shifted to the frontal section of the Far eastern high ravine (figure 12). On the latitude cross-section along the 40° north latitude, the ship moved westward, and the baric formations moved in an easterly direction, therefore the ground field of pressure was very variable, which frequently changed the weather conditions. Thus, the wind speed during the trip changed from 3 m/sec in the anticyclone to 22 m/sec in the cyclone. The rain and fog zones were replaced by clear skies.

In the entire troposphere and lower stratosphere there was a stable westeasterly air mass transfer. Depending on the strengthening or weakening of the high ravine over the Aleutian Islands, the wind speed changed from 30 to 75 m/sec at an altitude of 9-10 km (figure 13).

The synoptic condition in the region of the southern testing site (October 13 - November 1) was characterized by the presence of two centers of cyclonic activity which were periodically divided by a high-pressure wedge. The direction of the cyclones' movement and their steady-state regions were determined by a high baric field. The presence of a high [illegible] Pacific Ocean wedge in the middle troposphere, moving from the northern Pacific Ocean anticyclone to Chukotka and dividing

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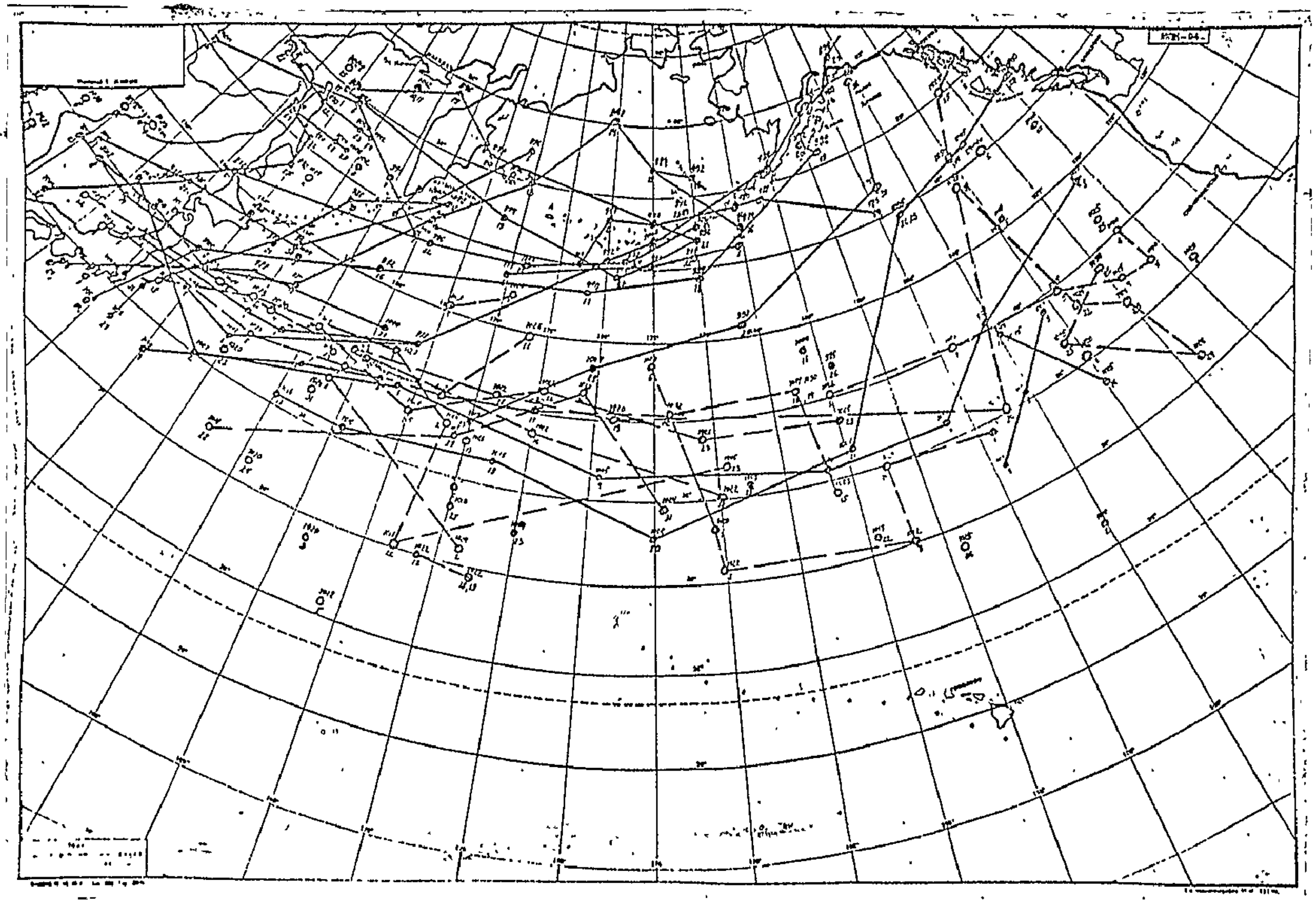

Figure 12. Composite cinematographic map of the centers of the cyclones and anti-cyclones. October. /99.

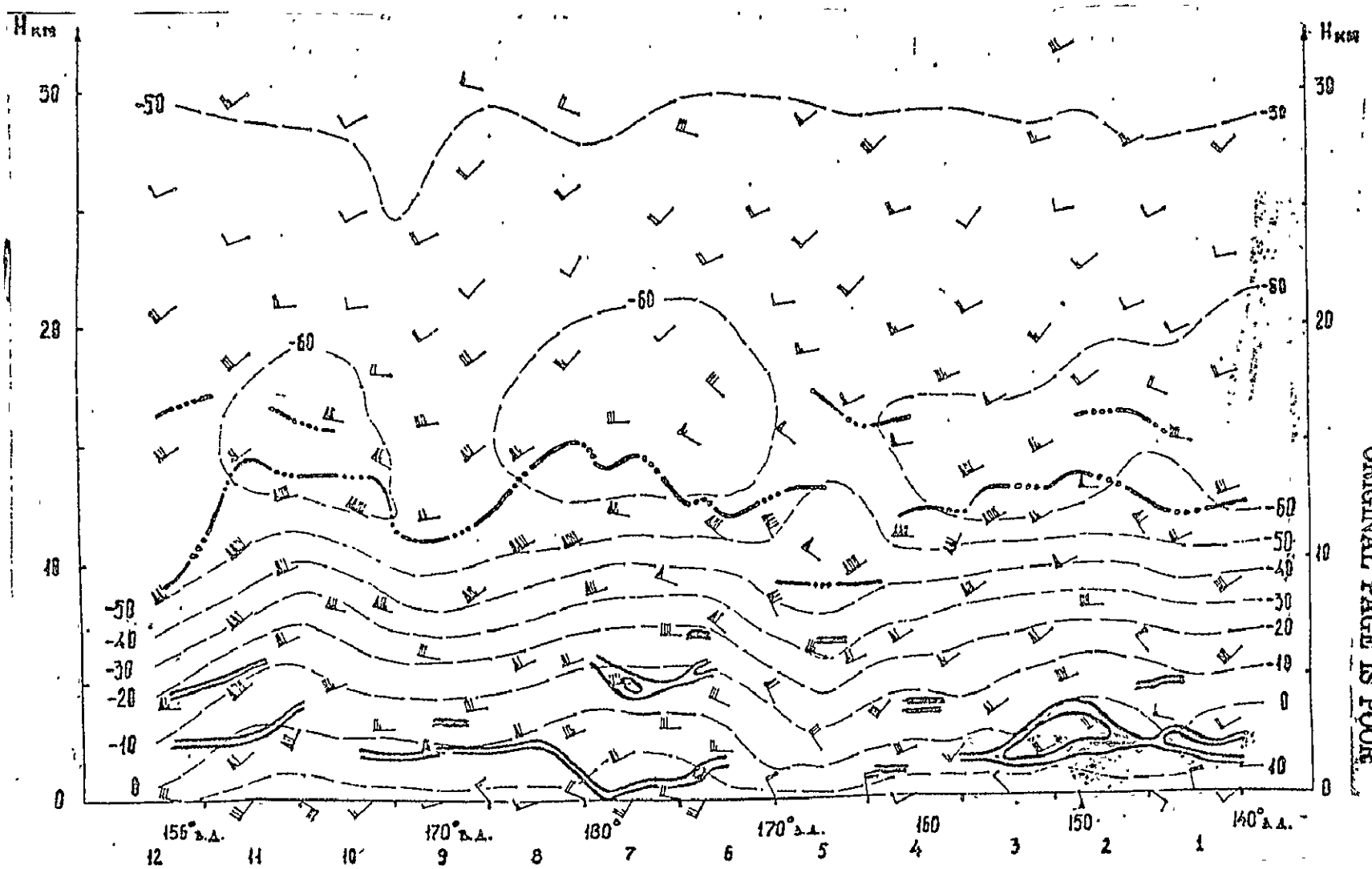

Figure 13. Three-dimensional time cross-section of the atmosphere along 40° north latitude. Pacific Ocean.

/100.

the aforementioned regions of cyclone origination, it also successfully hindered the passing of the southern cyclones into the Sea of Okhotsk. As the blocking wedge weakened, the cyclones shifted to the Aleutian Islands along two paths: /101. in the 55-60° north latitude and 35-40° north latitude zones. In the first type of processes, the southern cyclones from the Japanese Islands passed through the southern testing site. In the second type, the testing site was either on the southern periphery of the northern cyclones or on the northern periphery of the southern ones.

Actually, the synoptic situation and weather conditions at the southern testing site can be described as follows. Two wave cyclones entered the Sea of Japan on October 14. They joined together over the Japanese Islands and formed one cyclone which began to shift to the northeast to the region of the Aleutian Islands at a speed of 25 knots. And the cyclone intensified. On October 15, with a pressure of 1000 mbar at its center, it passed to the south of the testing site. In the operation area, we observed a brief intensification of the southeasterly, easterly wind to 15 m/sec, steady rain (figure 14). As this cyclone moved along, the air temperature rose at altitudes and the tropopause level increased from 10 to 13 km. In the lower 5-kilometer level frontal sections were clearly traced. The humid air (70-80%) extended to the tropopause level. As the cyclone passed, the impairment of the basic west-easterly transfer was observed only in the lower three-kilometer layer, i.e. the cyclone was a low baric formation (figure 15).

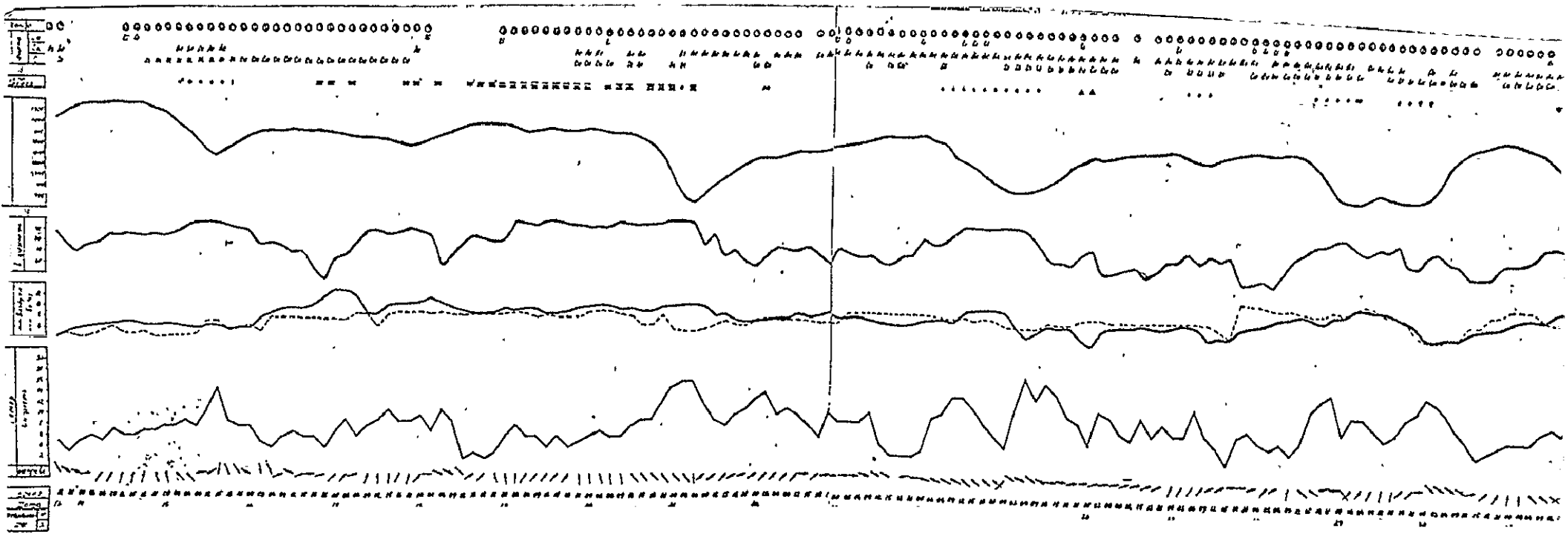

Figure 14. Path of the meteorological elements from October 13 to November 1.

/102.

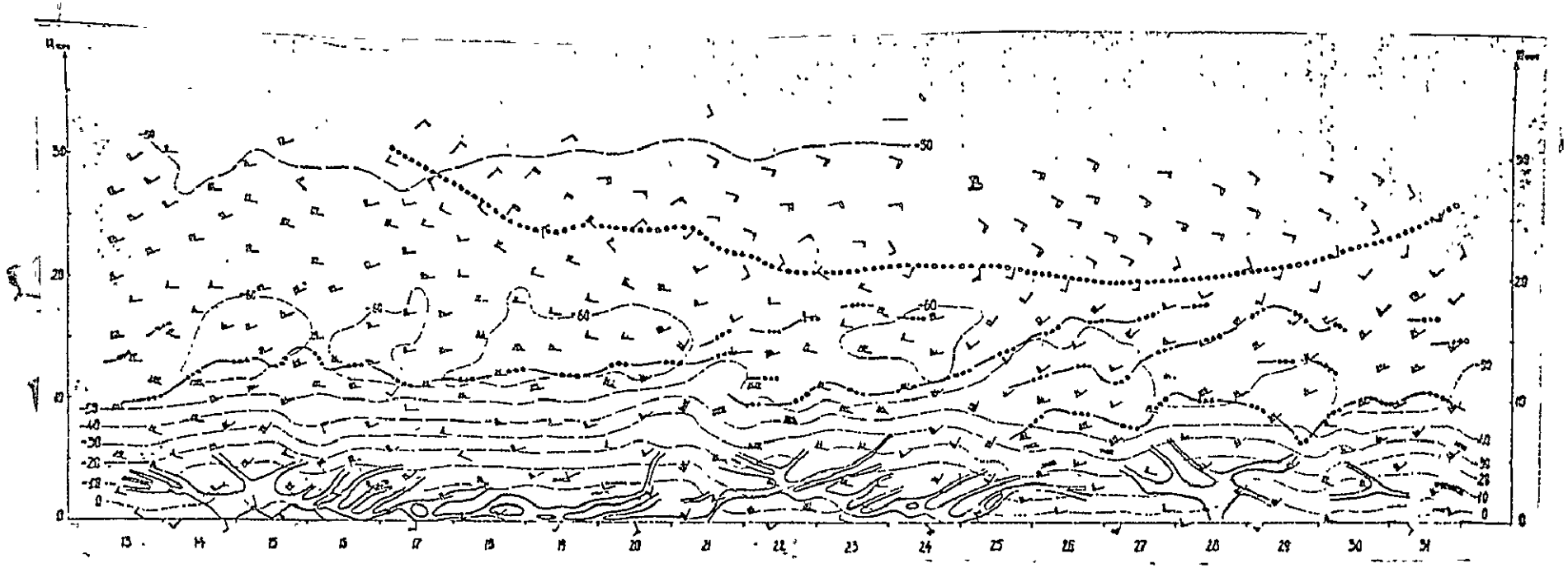

Figure 15. Time cross-section of the atmosphere. Southern testing site. (44° north latitude, 149° east longitude). Pacific Ocean.

/103.

From October 16-20 in the 50-60° north latitude zone several cyclones shifted from the Baikal region to the Aleutian Islands. As a rule, before they exit into the Sea of Okhotsk, the cyclones intensify. However, they do not have a large effect on the weather conditions in the operation area, because the centers of these cyclones pass far to the north of the testing site. We noticed an increase in the wind speed up to 11 m/sec only when fronts passed that were connected with these cyclones. With southern winds we oberved some fog or haze, which reduced visibility to 1 kilometer. Strong inhibiting layers in the two-kilometer layer did not enhance the exit of this humid air into higher levels.

By October 20, a restructuring of the baric field took place. There was an intensification of the Pacific Ocean blocking wedge and a worsening of the Far Eastern ravine which successfully impede the passage of the southern cyclones into the Sea of Okhotsk, where they remained stationary, forming a deep depression. The meteorological conditions in the water layer in the operation area were determined either by the southern periphery of the Okhotsk depression, or by the cyclones passing through the testing site and feeding this depression. The exit of these southern cyclones into the operations region continued until the end of the experiment. Their passing through the testing site was accompanied by a brief intensification of the wind speed up to 16-20 m/sec. The wind direction was determined by the location of the centers /104.

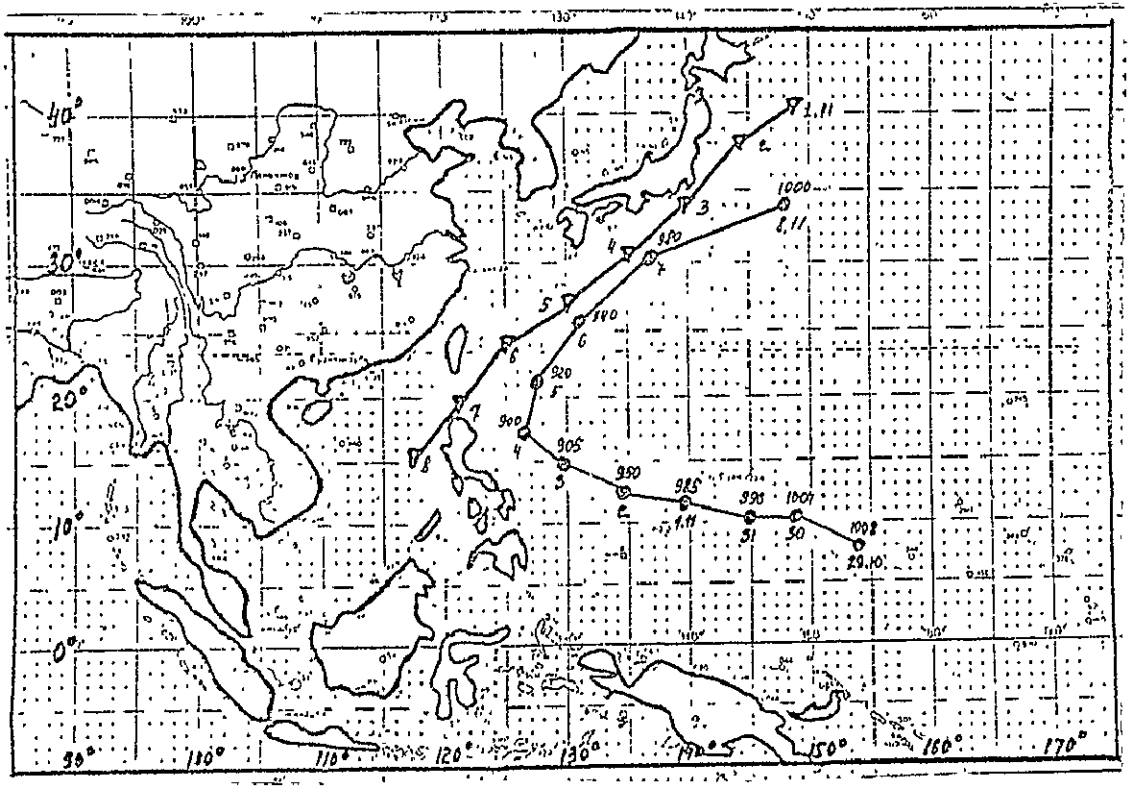

Figure 16. Path of the typhoon (Louisa).
∇ - movement of the scientific research ship "Akademik Korolev"
· - movement of the typhoon (Louisa)

/105.

of the cyclones relative to the testing sites. The Okhotsk depression was constantly being filled by these cyclones, regenerated, which caused an intensification of the baric gradients and, as a result, an intensification of the winds of the western compass points in the operations area up to 16 m/sec. As the front connected with the cyclones passed, there was a thick stratus-cumulus cloud cover and steady rain. With southern winds the visibility decreased to 500 meters because of the fog and haze.

The circulation scheme in the middle and upper troposphere during operations at the testing site was caused by the region of low pressure over the Sea of Okhotsk and by a slow moving northern Pacific Ocean anticyclone. The movement of warm air into the northwestern periphery of the high wedge and of the cold air mass into the southwestern periphery of the high ravine from the Asian mainland caused a worsening of the high frontal zone and, as a result, an intensification of the western flows at an altitude of 9-10 km up to 60-70 m/sec.

As the southern cyclones came out, the time contrasts in temperature at altitudes reached 8-10° daily. With southwesterly flows, there was frequent wearing away of the polar tropopause and a tropical tropopause appeared. In the lower two-meter layer, the relative humidity of the air varied from 70-90%, increasing with southwesterly flows and decreasing with westerly ones. Higher than this level, the atmosphere had moderate humidity (30-50%) and only with the passing through of the frontal sections and the intrusion of warm air masses from

the southwest did the humidity increase to 70-80%.

Operations at the southern testing site were completed on November 1. The first three days of movement (southern testing site is Singapore) the ship was located in the region of an anticyclone which was moving quickly in an easterly direction. Still during the operations at the test site on October 29 at 8° north latitude, 154° east longitude, a tropical depression formed with a pressure at the center of 1008 mbar. During the ensuing days, intensifying, it moved to the west-northwest. October 31 the tropical depression formed into typhoon Luiza. November 3, deepening to 900 mbar, the typhoon began to fill up and shift to the north, then shifted in a more easterly direction. November 8 it went out to a polar front and continued to shift in the direction of the Aleutian depression (figure 16). November 4 the ship entered the active zone of the typhoon, the rain and wind intensified. The ship and the typhoon were moving in opposite directions. The were closest together on November 5. At this time the easterly winds were registered at 20 m/sec. During the following days, the effect of the typhoon began to weakening.

After exiting into the South China Sea the ship was /106. located in a low gradient zone. The entire route to Singapore had slight northeasterly winds and clear sunny weather.

The trip from Singapore to Vladivostok was characterized by the fact that the scientific research vessel "Akademik Korolev" was located on the southeastern periphery of the Siberian

anticyclone. At the end of November it was located over China, i.e. occupies an extreme southern location. The pressure at the center of the anticyclone on certain days was higher than 1050 mbar. Because of this, between the low-pressure area near the equator and theSiberian anticyclone, a high gradient pressure zone formed. During the sailing time in the South China Sea, we observed a northeasterly wind up to 21 m/sec.

A high pressure nucleus emerged and passed through in an easterly direction through the East China Sea and Sea of Japan. The scientific research craft "Akademik Korolev" was located on the periphery of the small nucleus from November 30 to December 2. There was clear weather during these days with northeasterly winds up to 5 m/sec.

The high frontal zone during this period was located to the north of the 50° north latitude. There were weak flows over the sailing area. Intensification of the wind at an altitude took place as the ship moved to the north.
Thus, November 30, on the map with a 500 mbar surface, the wind was 30 m/sec.

Key to text page 125 /114.

1. Appendix II-2.
2. Table of Standard Hydrometeorological Observations at 15 minute intervals.
3. Date
4. Greenwich Mean Time (hours, minutes).
5. Coordinates
6. latitude (degrees, north)
7. longitude (degrees, west)
8. total amount of cloudiness
9. actual wind
10. direction (degrees)
11. speed (m/sec)
12. visibility (number)
13. hydrometeorological phenomena (beginning, end)
14. adjusted atmospheric pressure above sea level (mm)
15. air temperature °C
16. cloudiness
17. amount of middle and lower
18. type of lower
19. altitude of lower or middle
20. type of middle
21. type of upper
22. humidity
23. temperature of the dew point
24. absolute (mbar)
25. relative (%)
26. (exchange A)

Key to text page 126. /115.

1. Exchange B.
2. Exchange B.

Key to text page 127. /118.

1. Appendix III
2. Table of Data on the Temperature of the Sea Surface
3. GMT time
4. Temperature (T_p) (°C)
5. Temperature (T_k) (°C)
6. September 10, 1976 Coordinates 50°00'north latitude, 162°12' east longitude
7. September 10, 1976 Coordinates 50°00' north latitude, 162°24' east longitude
8. September 11, 1976 Coordinates 50°00' north longitude, 162°36' east longitude.

2 ТАБЛИЦА СТАНДАРТНЫХ ГИДРОМЕТЕОРОЛОГИЧЕСКИХ НАБЛЮДЕНИЙ ЗА 15-МИНУТНЫЕ ИНТЕРВАЛЫ

3 Дата	4 Время гринвичское (час., мин.)	5 Координаты: Широта (град. сев.)	7 Долгота (град. зап.)	8 Количество общей облачности	9 Истинный ветер: направление (град)	Скорость м/с	12 Видимость (балл)	13 Гидрометеорологические явления (начало, конец)	14 Исправленное атм. давление над ур. моря (мм)	15 Температура воздуха °С	16 Облачность: К-во нижней или средней	Форма нижней	Высота нижней или средней	Форма средней	Форма верхней	1 Влажность: Температура точки росы °С	Абсолютная (мб)	Относительная (%)
											17	18	19	20	21	23	24	25
I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9
9.09.76	23.30	49.8	I6I.8	-	2I0	I3.3	2		757.9	II.2	-		-	-	-	I0.9	I3.0	98
26 "	23.45	"	"	I0	2I0	I2.6	3		757.9	II.2	I0	St neb	200	+	+	I0.6	I2.8	96
I0.09.76 (общен 'А)	00.00	49.8	I62.0	I0	2I0	I2.9	7		757.9	II.2	I0	St neb	200	+	+	I0.6	I2.8	96
"	00.I5	"	"	I0	2I0	I3.6	7		756.3	II.4	I0	St neb	200	+	+	I0.9	I3.0	96
"	00.30	"	"	I0	2I0	I4.0	7		756.3	II.3	I0	St neb	200	+	+	I0.7	I2.9	96
"	00.45	"	"	I0	2I0	I3.9	7		756.3	II.3	I0	St neb	200	+	+	I0.7	I2.9	96
"	0I.00	"	"	I0	2I0	I3.9	7		756.I	II.3	I0	St neb	200	+	+	I0.7	I2.9	96
"	0I.I5	"	"	I0	2I0	I3.0	7		756.0	II.0	I0	St neb	200	+	+	I0.9	I3.0	99
"	0I.30	"	"	-	220	I3.I	3		755.8	II.I	-		-	-	-	I0.9	I3.0	98
"	0I.45	49.9	I62.0	-	220	I3.3	3		756.0	II.I	-		-	-	-	I0.9	I3.0	98
"	02.00	"	"	-	-	-	2		756.0	II.I	-		-	-	-	I0.9	I3.0	98
"	02.I5	"	"	-	220	II.9	2		756.I	II.I	-		-	-	-	II.I	I3.2	I00
"	02.30	"	"	-	230	I2.2	2		755.9	II.0	-		-	-	-	II.0	I3.I	I00
"	02.45	"	"	-	230	I2.I	2		756.0	II.0	-		-	-	-	II.0	I3.I	I00
"	03.00	"	"	-	220	I0.7	2		756.I	I0.9	-		-	-	-	I0.9	I3.0	I00
"	03.I5	"	"	-	230	I0.6	2		756.I	I0.9	-		-	-	-	I0.9	I3.0	I00
"	03.30	"	"	-	230	I0.6	2		756.0	I0.8	-		-	-	-	I0.8	I2.9	I00
"	03.45	"	"	-	230	I0.2	2		756.0	I0.8	-		-	-	-	I0.8	I2.9	I00
"	04.00	"	"	-	230	I0.0	2		756.0	I0.7	-		-	-	-	I0.7	I2.9	I00
"	2I.30	50.0	I62.3	6	240	I2.4	8		758.2	II.3	2		>2500	Ac tr	Ci and	8.9	II.4	85
"	2I.45	"	"	7	240	I3.8	8		757.9	II.3	2		>2500	Ac tr	Ci and Ci	8.9	II.4	85
"	22.00	50.0	I62.4	8	250	I3.8	8		757.9	II.4	2		>2500	Ac tr	Ci and Ci	8.5	II.I	82
"	22.I5	"	"	9	250	II.9	8		758.I	II.4	6		>2500	Ac und tr	Ci and Ci	8.8	II.3	84
"	22.30	"	"	9	250	I0.6	8		758.3	II.5	8		2500	Ac und tr	Ci	8.6	II.2	82
"	22.45	"	"	9	250	I2.6	8		758.0	II.5	8		2500	Ac und tr	Ci	8.9	II.4	84
"	23.00	"	"	8	250	I3.2	8		758.I	II.5	6		2000	Ac und tr	Ci	8.6	II.2	82
"	23.I5	"	"	7	250	I3.2	8		758.3	II.5	5		2000	Ac und tr	Ci und	8.6	II.2	82
"	23.30	50.0	I62.6	8	250	I2.5	8		758.8	II.6	4		> 2500	Ac und tr	Ci und	8.8	II.3	82
I0.09.76	23.45	50.0	I62.6	8	260	I3.I	8		758,5	II.5	6		2500	Ac und tr	Ci und	8.6	II.2	82

I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9
II.09.76	00.00	50.0 с	I62.6 в	7	–	–	8		758.8	II.6	6	–	2500	Acundtr	Ci	8.8	II.3	82
(обмен Б)	00.I5	"	"	7	260	I3.8	8		758.8	II.5	6	–	2500	Acundtr	Ci	8.9	II.4	84
"	00.30	"	"	7	260	I3.5	8		758.4	II.5	6	–	2500	Acundtr	Ci	8.6	II.2	82
"	00.45	"	"	5	270	I2.5	8		758.5	II.5	4	–	2500	Acundtr	Ci	8.6	II.2	82
"	0I.00	"	"	5	270	I3.3	8		758.6	II.5	4	–	2500	Acundtr	Ci	8.6	II.2	82
"	0I.I5	"	"	5	270	I4.8	8		758.4	II.7	4	–	2500	Acundtr	Ci	8.9	II.4	83
"	0I.30	"	"	5	260	I4.4	8		758.8	II.7	4	–	2500	Acundtr	Ci	8.9	II.4	83
"	0I.45	"	"	5	250	I6.I	8		758.7	II.7	4	–	2500	Acundtr	Ci	8.9	II.4	83
"	02.00	"	"	5	250	I5.8	8		758.9	II.7	4	–	2500	Acundtr	Ci	8.9	II.4	83
"	02.I5	"	"	7	260	I5.6	8		758.9	I2.I	7	–	2500	Actr	–	8.2	I0.9	77
"	02.30	"	"	7	270	I5.I	8		758.7	I2.2	7	–	2500	Actr	–	8.4	II.0	77
"	02.45	"	"	8	250	I6.2	8		758.2	II.8	8	–	2500	Actr	–	8.4	II.0	80
"	03.00	"	"	8	240	I5.3	8		758.I	II.8	8	–	2500	Actr	–	8.4	II.0	80
"	03.I5	"	"	5	250	I5.5	8		758.I	II.7	5	–	2500	Actr	–	8.2	I0.9	80
"	03.30	"	"	7	260	I4.8	8		758.5	II.8	7	–	2500	Actr	–	9.0	II.5	83
I2.09.76	23.30	50.3	I66.0	I0	20	2I.0	6	◦	742.6	7.3	I0	Fr nb Ns	200	. – .	–	5.9	9.3	9I
"	23.45	"	"	I0	I0	20.5	7	◦	743.3	7.3	I0	Fr nb Ns	300	–	–	5.9	9.3	9I
I3.09.76	00.00	50.3	I66.0	I0	I0	I9.6	7	◦	743.5	7.4	I0	Fr nb Ns	300	–	–	6.I	9.4	9I
(обмен Б)	00.I5	"	"	I0	I0	I8.8	7		744.8	7.7	I0	Fr nb Ns	300	–	–	5.9	9.3	89
"	00.30	"	"	I0	I0	I8.9	8		744.6	8.0	8	St fr	300	Acop	–	5.8	9.2	86
"	00.45	"	"	I0	I0	I9.2	8		745.2	7.8	8	St Sc Cu	600	Ac	–	5.6	9.I	86
"	0I.00	"	"	I0	I0	I9.2	8	⊙	745.7	8.0	5	Cu St	600	Actr	–	5.I	8.8	82
"	0I.I5	"	"	6	I0	I9.2	8	⊙	746.5	8.0	5	Cu St	600	Actr	–	4.I	8.2	77
"	0I.30	"	"	I0	I0	I6.9	8		747.I	8.0	8	Cu Cb	600	Ac	–	4.I	8.2	77
"	0I.45	"	"	I0	I0	I5.9	8	⊙	747.4	8.4	8	Cu St	600	Actr	–	4.8	4.6	78
"	02.00	"	"	8	–	–	8	⊙	748.0	8.8	6	Cu	600	Actr	–	4.8	8.6	76
"	02.I5	"	"	5	350	I5.5	8	⊙	748.3	8.8	3	Cu	600	Actr	–	4.3	8.3	73
"	02.30	"	"	5	350	I3.6	8	⊙	749.I	8.8	2	Cu	600	Actr	Ci	4.8	8.6	76
"	02.45	"	"	8	350	I5.I	7		749.3	8.7	5	Cu Cb	600	Ac	–	5.0	8.7	78
"	03.00	"	"	4	330	I6.6	8	○	750.0	8.7	I	Cu	600	Actr	Ci sp	5.0	8.7	78
"	03.I5	"	"	4	–	–	8	○	750.I	9.0	I	Cu	600	Actr	Ci sp	5.3	8.9	77
"	03.30	"	"	3	330	I5.0	8	○	750.I	9.5	I	Cu	600	Actr	Ci sp	4.8	8.6	72
"	03.45	"	"	5	340	I3.9	8	⊙	750.4	9.5	2	Cu	600	Actr	Ci sp	4.3	8.3	70
"	04.00	"	"	4	330	I4.I	8	⊙	750.6	9.7	I	Cu	600	Actr	Ci sp	4.8	8.6	72
"	04.I5	"	"	3	320	I3.2	8	⊙	75I.I	9.4	I	Cu	600	–	Ci sp	4.5	8.4	7I
"	04.30	50.I	"	3	–	–	8	⊙	75I.2	9.4	I	Cu	600	–	Ci sp	4.5	8.4	7I
"	04.45	"	"	3	–	–	8	⊙	75I.9	9.4	I	Cu	600	–	Ci sp	4.0	8.I	69
I3.09.76	05.00	50.I	I66.0	3	320	I2.8	8	⊙	752.I	9.4	I	Cu	600	–	Ci sp	4.0	8.I	69

I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9
I3.I0.76	0I.I5	43.5 c	I5I.0B	[I0]	200	8.8	8		763.2	7.9	4	St fr	500	Ac tr	–	5.6	9.I	86
"	0I.30	"	"	8	200	9.4	8		763.0	7.9	3	Sc tr	600	Ac tr	–	5.5	9.0	85
"	0I.45	"	"	[IC]	200	9.4	8		763.0	7.9	7	Sc tr	600	Ac tr	–	5.5	9.0	85
"	02.00	"	"	I0	220	9.I	7	•	763.I	8.0	5	St fr	400	Ac op	–	5.I	8.8	82
"	02.I5	"	"	I0	230	8.4	7	•	763.2	8.I	I0	Fr nl Ns	400	–	–	5.0	8.7	8I
"	02.30	"	"	[I0]	2I0	8.7	7		763.0	8.2	[I0]	Sc	400	–	–	5.I	8.8	8I
"	02.45	"	"	6	230	II.I	7		762.9	8.2	4	St fr	400	Ac	–	5.3	8.9	82
"	03.00	"	"	6	230	II.0	7		762.9	8.2	4	St fr	400	Ac	–	5.3	8.9	82
"	03.I5	"	"	0	–	–	7		762.5	8.4	0	–	–	–	–	5.5	9.0	82
"	03.30	"	"	0	–	–	7		762.9	9.3	0	–	–	–	–	6.I	9.4	80
"	03.45	"	"	0	230	–	7		762.9	9.4	0	–	–	–	–	5.9	9.3	79
I3.I0.76	04.00	"	"	0	250	–	6		762.8	9.2	0	–	–	–	–	5.9	9.3	80
25.I0.76	02.00	44.2	I48.8	I0	290	7.7	6	•	743.0	8.0	I0	Fr nl Ns	400	–	–	7.I	I0.I	94
"	02.I5	"	"	I0	3I0	7.8	6	•	743.9	8.0	I0	Fr nl Ns	400	–	–	7.I	I0.I	94
"	02.30	"	"	I0	320	7.6	6	•	743.0	8.0	I0	Fr nl Ns	400	–	–	7.I	I0.I	94
"	02.45	"	"	I0	320	8.7	6	•	742.5	7.2	I0	Fr nl Ns	600	–	–	6.8	9.9	97
"	03.00	"	"	I0	320	I2.2	6	•	742.5	7.2	I0	Fr nl Ns	600	–	–	6.8	9.9	97
"	03.I5	"	"	I0	330	II.0	6	•	742.0	7.2	I0	Fr nl Ns	600	–	–	7.0	I0.0	98
"	03.30	"	"	I0	330	I2.4	6	•	742.0	7.2	I0	Fr nl Ns	600	–	–	7.0	I0.0	98
"	03.45	"	"	I0	330	II.0	6	•	742.0	6.8	I0	Fr nl Ns	600	–	–	6.8	9.88	I00
"	04.00	"	"	I0	330	II.2	6	•	742.0	6.8	I0	Fr nl Ns	600	–	–	6.8	9.88	I00
"	04.I5	"	"	I0	300	I4.0	7	•	742.9	6.2	I0	Fr nl Ns	600	–	–	5.3	8.90	94
"	04.30	"	"	I0	3I0	I4.4	7	•	743.0	5.4	I0	Fr nl Ns	600	–	–	4.9	8.68	97
"	04.45	"	"	I0	3I0	I4.9	6	•	743.0	5.4	I0	Fr nl Ns	600	–	–	4.9	8.68	97
"	05.00	"	"	I0	3I0	I3.9	6	•	743.0	5.6	I0	Fr nl Ns	600	–	–	5.I	8.80	97
"	05.I5	"	"	I0	3I0	I3.2	6	•	744.0	6.0	I0	Fr nl Ns	400	–	–	5.I	8.77	94
"	05.30	"	"	I0	3I0	I6.4	6	•	735.8	5.4	I0	Fr nl Ns	400	–	–	4.7	8.54	95
"	05.45	"	"	I0	3I0	I8.2	6	•	743.I	5.4	I0	Fr nl Ns	400	–	–	4.5	8.40	94
"	06.00	"	"	I0	3I0	I7.7	6	•	743.I	5.4	I0	Fr nl Ns	400	–	–	4.5	8.40	94
"	06.I5	"	"	I0	3I0	I5.3	6	•	743.I	5.4	I0	Fr nl Ns	400	–	–	4.5	8.40	94
"	06.30	"	"	I0	3I0	I5.2	6	•	743.I	5.2	I0	Fr nl Ns	400	–	–	4.3	8.28	94
"	06.45	44.2	I49.0	I0	3I0	I5.I	6	•	743.2	5.0	I0	Fr nl Ns	400	–	–	4.I	8.I6	94

I	2	3	4	5	6	7	8	9	IO	II	I2	I3	I4	I5	I6	I7	I8	I9
30.IO.76 г	02.00	42.9	I48.4	8	300	I6.9	8		747.9	6.6	8	Cu Sc	600	–	–	4.5	8.43	87
"	02.I5	"	"	9	300	I3.6	8		749.0	6.6	9	Cu Sc	600	–	–	5.0	8.72	90
"	02.30	"	"	9	300	I3.3	8		749.3	6.8	9	Cu Sc	600	–	–	4.7	8.56	87
"	02.45	"	"	9	300	I4.9	8		750.0	6.8	9	Cu Sc	600	–	–	4.2	8.27	84
"	03.00	"	"	I0	300	I6.5	8		750.3	6.8	I0	Cu Sc	600	–	–	3.5	7.84	79
"	03.I5	"	"	9	300	I5.7	8		75I.8	6.8	9	Cu Sc	600	–	–	3.8	7.99	8I
"	03.30	"	"	9	–	–	8		752.0	7.0	8	Cu Sc	600	Actr	–	4.0	8.II	8I
"	03.45	"	"	5	–	–	8		752.5	6.8	3	Cu Sc	600	Actr	–	4.2	8.27	84
"	04.00	43.0	I49.I	4	290	I4.5	8		752.8	6.8	2	Cu Sc	600	Actr	Cu	4.2	8.27	84
"	04.I5	"	"	6	290	I3.0	8		753.I	6.8	5	Cu Sc	600	Actr	–	4.2	8.27	84
"	04.30	"	"	4	290	I3.0	8		753.5	6.8	3	Cu Sc	600	Actr	–	4.2	8.27	84
"	04.45	"	"	2	290	I2.8	8		754.0	7.0	I	Cu Sc	600	Actr	–	3.8	8.0	80
"	05.00	"	"	5	290	I2.I	8		755.0	7.0	4	Cu Sc	600	Actr	–	3.8	8.0	80
"	05.I5	"	"	4	290	I2.8	8		756.0	7.6	3	Cu	600	Actr	–	3.4	7.8	75
"	05.30	"	"	2	290	I2.9	8		756.5	7.6	2	Cu	600	–	–	3.4	7.8	75
"	05.45	"	"	2	290	I3.0	8		756.5	7.2	I	Cu	600	Actr	–	3.2	7.7	75
30.IO.76 г.	06.00	43,0 с	I49.I в	I	290	I3.2	8		756.5	7.2	I	Cu	600	–	–	3.2	7.7	75

2. Таблицы данных о температуре морской поверхности Ш-2-4

3 Время ГМТ	4 $T_п$ (°С)	5 $T_к$ (°С)	3 Время ГМТ	4 $T_п$ (°С)	5 $T_к$ (°С)
I	2	3	I	2	3
I0.09.76 г.			22.I5	I0.8	I0.6
6 Координаты 50°00', с.ш. I62°I2 в.д.			25	I0.7	I0.7
			30	I0.6	I0.6
I2.40	I0.6	I0.7	35	I0.8	I0.6
45	I0.6	I0.7	40	I0.9	I0.6
50	I0.5	I0.7	45	I0.9	I0.7
55	I0.5	I0.7	50	II.I	I0.7
I3.00	I0.6	I0.7	55	II.2	I0.7
05	I0.4	I0.7	23.00	II.I	I0.7
I0	I0.I	I0.6	05	II.0	I0.7
I5	I0.2	I0.7	I0	II.I	I0.7
20	I0.2	I0.7	I5	II.I	I0.8
25	I0.2	I0.7	20	II.I	I0.7
30	I0.4	I0.7	25	II.I	I0.7
35	I0.6	I0.6	30	II.3	I0.7
40	I0.6	I0.6			
45	II.3	I0.6	5 II.09.76 г.		
50	II.0	I0.6	8 Координаты 50°00' с.ш. I62°36' в.д.		
55	II.2	I0.6			
I4.00	II.3	I0.6	00.00	–	II.0
			05	–	II.0
I0.09.76 г.			I0	–	II.0
7 Координаты 50°00', с.ш. I62°24 в.д.			I5	–	II.0
			20	–	II.0
2I.30	II.4	I0.7	25	–	II.0
35	II.4	I0.6	30	–	II.0
40	II.3	I0.6	35	–	II.0
45	II.2	I0.7	40	–	II.I
55	II.0	I0.6	45	–	II.I
22.00	II.0	I0.6	50	–	II.I
05	II.I	I0.7	55	–	II.I
I0	I0.9	I0.6			

Key to text page 131 /119.

1. September 13, 1976 Coordinates 50°18' north latitude 166°00' east longitude
2. September 13, 1976 Coordinates 50°00' north latitude, 167°12' east longitude
3. October 13, 1976 Coordinates 43°30' north latitude, 151°00' east longitude

Key to text page 132 /120.

1. October 13, 1976 Coordinates 45°00' north latitude, 149°30' east longitude
2. October 25, 1976 Coordinates 44°12' north latitude, 148°48' east longitude

Key to text page 133 /121.

1. October 25, 1976 Coordinates 44°12' north latitude, 149°00' east longitude.

Key to text page 134 /122.

1. Table of Probing Results
2. Coordinates φ = 49.8 north latitude λ = 161.8 west longitude
3. September 9, 1976 Time 22:30 GMT Cloudy 10/10
4. H, km
5. P, mbar
6. D° 7. V, m/sec.

Key to text page 135 /123.

1. Table of Probing Results
2. Coordinates φ = 50.8 north latitude, λ = 162.3 west longitude
3. September 10, 1976 Time 22:00 GMT Cloudy 08/00 Ci, Ac
4. H, km
5. P, mbar
6. D° 7, V, m/sec

Key to text page 136 /124.

1. Table of Probing Results
2. Coordinates φ = 43.5 north latitude, λ = 151.0 east longitude
3. October 12, 1976 Time 22.00 GMT Cloudiness 0/0
4. H, km
5. P, mbar
6. D° 7. V, m/sec

Key to text page 137 /125.

1. Table of Probing Results
2. Coordinates $\varphi \doteq$ 50.3 north latitude, $\lambda \doteq$ λ66.0 west longitude
3. September 13, 1976 Time 03:00 GMT Cloudiness 03/03 Cu, Sc
4. H, km 5, p, mbar 6. D° 7. V, m/sec

I	2	3
01.00	–	II.I
05	–	II.I
I0	–	II.2
I5	–	II.2
20	–	II.2
25	–	II.0
30	–	II.0
I3.09.76 г.		
Координаты	50°I8'с.ш. I66°00'в.д.	
00.00	–	8.9
05	–	8.9
I0	–	8.8
I5	–	8.8
20	–	8.7
25	–	8.7
30	–	8.8
35	–	8.7
40	–	8.8
45	–	8.8
50	–	8.8
55	–	8.8
01.00	–	8.8
05	–	8.9
I0	–	8.8
I5	–	8.8
20	–	8.7
25	–	8.8
30	–	8.9
02.00	–	8.8
05	–	8.9
I0	–	8.9
I5	–	8.8
20	–	8.8
25	–	8.8
30	–	8.7
35	–	8.8
40	–	8.9
02.50	–	8.9
55	–	8.9
2 I3.09.76 г.		
Координаты	50°00'с.ш. I67°I2'в.д.	
I2.20	–	8.8
25	–	8.7
30	–	8.7
35	–	8.7
40	–	8.7
45	–	8.6
50	–	8.7
55	–	8.7
I3.00	–	8.7
05	–	8.7
I0	–	8.6
I5	–	8.6
20	–	8.6
25	–	8.6
30	–	8.6
35	–	8.6
40	–	8.6
45	–	8.6
50	–	8.6
3 I3.I0.76 г.		
Координаты	43°30'с.ш. I5I°00'в.д.	
00.00	6.8	–
05	6.9	–
I0	6.8	–
I5	7.0	–
20	7.I	–
25	7.I	–
30	7.0	7.0
35	7.0	6.9
40	7.I	6.9
45	7.I	6.8
50	7.I	6.9

I	2	3
00.55	7.3	6.9
01.00	7.2	6.9
05	7.2	6.8
10	7.2	6.9
15	7.3	6.8
20	7.3	6.9
25	7.5	–
30	7.8	–
35	7.0	–
40	6.8	–
45	6.9	–
50	7.0	6.9
55	7.3	6.9
02.00	7.3	6.8
05	7.1	6.9
10	7.0	6.9
15	7.3	7.0
20	7.5	7.0
25	7.5	7.0
30	7.4	7.0
35	7.5	7.0
40	6.9	6.9
45	6.6	7.0
50	6.7	7.0
55	6.7	7.1
03.00	6.8	7.1
05	6.7	–
10	6.8	–
13.10.76 г.		
Координаты	45°00'с.ш. 149°30'в.д.	
21.00	3.8	–
05	3.9	–
10	3.5	–
15	3.6	–
20	3.9	–
25	3.8	–
30	3.8	4.2

I	2	3
21.35	4.1	4.2
40	4.0	4.2
45	4.1	4.3
50	4.1	4.3
55	4.2	4.4
22.00	4.4	4.4
05	4.7	–
10	4.2	–
15	4.2	–
20	3.9	–
25	3.4	–
30	4.0	–
35	4.2	–
40	4.2	–
45	4.2	–
50	4.8	–
55	4.4	–
23.00	5.0	–
05	4.6	–
25.10.76 г.		
Координаты	44°12'с.ш. 148°48'в.д.	
01.30	7.6	7.4
35	7.5	7.5
40	7.1	7.2
45	7.4	7.3
50	7.2	7.4
55	7.1	7.5
02.00	7.3	7.4
05	7.0	7.6
10	7.2	7.5
15	7.3	7.5
20	7.3	7.6
25	7.3	7.6
30	7.4	7.5
35	7.2	7.5
40	7.2	7.3

I	2	3
02.45	7.0	7.4
50	7.I	7.5
55	7.4	7.5
03.00	7.I	7.4
05	7.5	7.5
I0	7.2	7.5
I5	7.I	7.5
20	7.4	7.4
25	7.5	7.4
30	7.4	7.3
35	7.6	7.3
40	7.7	7.5
45	7.4	7.4
50	7.4	7.3
55	7.4	7.5
04.00	7.3	7.4
05	7.2	7.4
I0	7.3	7.4
I5	7.5	7.5
20	7.6	7.5
25	7.4	7.5
30	7.5	7.6
35	7.4	7.5
40	7.3	–
45	7.6	–
50	7.5	–
55	7.4	–
05.00	7.5	–
05	7.7	–
I0	7.5	–
I5	7.6	–
20	7.7	–
25	7.8	–
30	7.5	–
35	7.6	–
40	7.4	–
45	7.5	–
50	7.7	–
55	7.6	–
06.00	7.4	–

25.I0.76 г.

Координаты 44°I2'с.ш. I49°00'в.д.

I	2	3
I9.00	–	8.4
05	–	8.5
I0	–	8.4
I5	–	8.5
20	–	8.4
25	–	8.6
30	–	8.3
35	–	8.I
40	–	8.2
45	–	8.5
50	–	8.4
55	–	8.3
20.00	–	8.5

Таблица результатов зондирования III-2-5

2 Координаты φ = 49.8 с.ш.
λ = 161.8 з.д

3 9 сентября 1976 г.
Время 22 ч.30 м. ГМТ
Облачность IO/IO

4 H км	5 P мб	T °C	U %	6 Д °	7. V м/сек
0.0I	I009	II.4	94	2I0	I3
0.20	987	I0.3	90	220	I8
0.50	952	I0.2	92	239	27
I.00	896	II.6	92	260	I8
I.50	844	9.8	93	256	2I
2.00	795	8.2	93	24I	20
3.00	704	2.8	8I	254	22
4.00	62I	0.2	6I	26I	27
5.00	548	-5.6	64	267	3I
6.00	482	-9.6	I4	245	37
7.00	422	-I4.8	53	264	44
8.00	370	-I9.8	76	262	47
9.00	323	-26.6	72	270	49
I0.00	280	-33.0	63	275	53
II.00	243	-40.I	54	280	59
I2.00	209	-47.I	53	28I	62
I3.00	I70	-54.8	60	279	57
I4.00	I53	-6I.4	6I	277	49
I5.00	I30	-63.0	58	280	45
I6.00	II0	-63.I	54	284	34
I7.00	93.9	-62.I	49	280	22
I8.00	79.9	-6I.4	46	257	I7
I9.00	68.0	-6I.4	44	28I	I2
20.00	57.9	-69.I	43	266	I0
2I.00	49.4	-57.8	40	236	09
22.00	42.2	-55.8	36	3I9	08
23.00	36.I	-55.I	33	276	07
24.00	30.9	-52.I	30	2I2	06
25.00	26.4	-5I.4	27	226	07
26.00	22.7	-49.4	24	283	05
27.00	I9.5	-47.0	2I	34I	03
28.00	I6.8	-46.0			

Таблица результатов зондирования

2 Координаты $\varphi = 50.8$ с.ш.
$\lambda = 162.4$ з.д.

3 10 сентября 1976 г.
Время 22 ч.00 м. ГМТ
Облачность 08/00 Ci, Ac

1	4	5		6	7.
H км	P мб	T °C	U %	Д °	V м/сек
0.01	1009	11.0	85	250	10
0.20	986	9.1	84	260	13
0.50	951	7.7	81	276	23
1.00	895	7.0	57	282	23
1.50	842	6.8	33	277	23
2.00	792	5.2	24	272	25
3.00	700	2.3	21	271	31
4.00	618	-2.7	18	267	33
5.00	544	-8.8	24	263	35
6.77	477	-16.3	68	262	39
7.00	418	-17.6	66	268	47
8.00	365	-23.4	65	270	55
9.00	318	-26.4	52	265	59
10.00	276	-32.9	45	266	62
11.00	240	-37.5	41	272	63
12.00	207	-45.8	42	272	60
13.00	177	-53.6	46	254	62
14.00	151	-60.4	52	253	62
15.00	129	-67.0	54	256	55
16.00	109	-61.2	51	264	43
17.00	93.1	-59.9	26	265	30
18.00	79.3	-59.6	42	266	20
19.00	67.5	-63.0	38	270	17
20.00	57.4	-61.2	36	259	18
21.00	48.9	-56.5		256	13

Таблица результатов зондирования

2. Координаты $\varphi = 43.5$ с. ш.
$\lambda = 151.0$ в. д.

3 Время 12 октября 1976 г.
Время 22 ч.00 м. ГМТ
Облачность 0/0

1	5			6	7
H км	P мб	T °C	U %	Д °	V м/сек
0.01	1018	7.6	75	290	09
0.20	994	6.1	71	252	04
0.50	959	3.8	75	237	06
1.00	901	1.4	50	265	14
1.50	846	-2.0	64	262	15
2.00	794	-5.8	74	256	16
3.00	698	-12.8	73	276	18
4.00	612	-16.1	59	269	28
5.00	535	-20.4	55	264	32
6.00	467	-26.9	52	266	36
7.00	405	-34.8	52	262	39
8.00	350	-42.1	52	264	41
9.00	301	-50.3	48	259	43
10.00	258	-56.0	46	258	48
11.00	221	-54.2	45	256	51
12.00	189	-52.5	45	254	49
13.00	162	-54.4	42	254	48
14.00	138	-54.1	43	259	46
15.00	118	-55.2	43	257	36
16.00	101	-54.8	42	248	29
17.00	86.4	-54.6	39	246	28
18.00	73.9	-56.0	38	250	28
19.00	63.2	-53.8	39	254	28
20.00	54.0	-56.0	34	228	22
21.00	46.2	-54.0	36	266	15
22.00	39.5	-53.1	38	253	15
23.00	33.9	-50.3	38	238	15
24.00	29.0	-52.6		235	13
25.00	24.8	-53.2		217	15
26.00	21.3	-52.8		217	14
27.00	18.2	-52.2		244	08
28.00	15.6	-50.0		242	05
29.00	13.4	-49.6		225	05
30	11.5	-49.2		272	08

Таблица результатов зондирования

2. Координаты $\varphi = 50.3$ с.ш.
$\lambda = 166.0$ з.д.

3. 13 сентября 1976 г.
Время 03 ч.00 м. ГМТ
Облачность 03/03 Cu. Sc

4	5			6	7.
H км	P мб	T °C	U %	Д °	V м/сек
0.01	1004	9.2	78	250	13
0.20	982	7.5	81	322	13
0.50	946	4.8	84	322	12
1.00	890	0.6	78	334	14
1.50	836	-2.5	67	338	16
2.0	784	-5.4	82	323	18
3.00	690	-8.4	28	326	20
4.00	605	-13.6	38	322	22
5.00	530	-19.3	44	314	23
6.00	462	-26.9	48	310	26
7.00	402	-34.3	47	305	28
8.00	347	-42.2	46	302	26
9.00	299	-49.8	45	295	27
10.00	256	-46.8	41	270	32
11.00	221	-43.9	35	272	34
12.00	190	-45.4	31	268	35
13.00	163	-47.3	29	272	33
14.00	140	-49.0	28	270	29
15.00	120	-50.0	28	265	27
16.00	103	-50.8	28	262	26
18.00	75.9	-52.4	27	276	18
19.00	65.0	-52.4	27	286	14
20.00	55.7	-54.0	27	275	12
21.00	47.6	-54.4	26	258	12
22.00	40.8	-52.6	26	323	11
23.00	34.9	-52.8	26	296	06
24.00	29.9	-52.1	26	283	07
25.00	25.6	-52.6	26	287	07
26.00	22.0	-51.6		295	05
27.67	17.0	-50.3		273	08
28.48	15.0	-47.8		291	07
29.26	13.3	-45.2		297	07

Key text page 139

1. Table of Probing Results
2. Coordinates φ = 44.2 north latitude, λ = 149.0 east longitude.
3. October 25, 1976 Time 07:30 GMT Cloudiness 10/10 Ns, Frb
4. H, km
5. P, mbar
6. D°

Key to text page 140

1. Table of Probing Results
2. Coordinates φ = 43.0 north latitude, λ = 149.1 east longitude.
3. October 30, 1976 Time 06.00 GMT Cloudiness 01/01 Cu
4. H, km
5. P, mbar
6. D° 7. V, m/sec

Таблица результатов зондирования

Координаты: $\varphi = 44.2$ с.ш. 25 октября 1976 г.

$\lambda = 149.0$ в.д. Время 07 ч.30 м. ГМТ

Облачность 10/10 Ns Fnb

4	5			6	7.
H км	Pмб	T°C	U%	Д°	V м/сек
0.01	992	5.4	97	310	18
0.20	969	3.5	98	323	15
0.50	934	1.0	100	324	16
1.00	878	-0.0	100	329	16
1.50	824	0.5	100	354	07
2.00	775	1.4	100	228	04
3.00	684	-3.3	100	250	07
4.00	602	-7.7	100	217	09
5.00	528	-19.3	71	212	14
6.00	461	-25.2	57	208	17
7.00	401	-30.4	47	205	21
8.00	348	-34.7	43	199	23
9.00	301	-42.2	41	198	29
10.00	259	-45.3	41	202	35
11.00	223	-48.4	40	208	36
12.00	191	-53.0	40	203	30
13.00	163	-57.3	41	206	34
14.00	140	-56.6	41	221	32
15.00	119	-52.9	41	224	25
16.00	102	-57.8	41	220	15
17.00	86.8	-62.6	41	211	13
18.00	74.0	-57.4	42	205	11
19.00	63.1	-58.1	43	212	09
20.00	53.9	-57.6	44	204	08
21.00	46.1	-52.9	44	177	08
22.00	39.4	-58.2	44	161	07
23.00	33.6	-55.5		150	06

1 Таблица результатов зондирования

2 Координаты $\varphi = 43.0$ с.ш.
$\lambda = 149.1$ в.д.

3 30 октября 1976 г.
Время 06 ч.00 м. ГМТ
Облачность 01/01 Cu

4 Н км	5 Р мб	Т °С	U %	6 Д °	7. $V^{м}_{зк}$
0.01	1007	7.2	74	290	13
0.20	984	4.9	76	292	4
0.50	949	2.6	79	302	21
1.00	891	-0.7	70	309	21
2.00	785	-8.0	68	298	20
3.00	690	-8.1	27	294	20
4.00	606	-12.4	26	298	18
5.00	531	-19.6	30	289	23
6.00	463	-26.6	29	276	24
7.00	402	-35.5	25	274	25
8.00	347	-46.0	25	268	31
9.00	298	-50.7	26	263	49
10.00	256	-50.1	26	263	47
11.00	220	-47.7	24	248	45
12.00	188	-52.2	23	249	41
13.00	161	-53.3	22	253	35
14.00	138	-55.1	22	248	32
15.00	118	-53.1	21	246	24
16.00	101	-55.9	22	242	17
17.00	86.2	-59.1	22	232	14
18.00	73.6	-56.5	21	222	13
19.00	62.9	-54.3	21	211	14
20.00	53.8	-55.6	22	200	15
21.00	46.0	-56.6	22	190	13
22.00	39.3	-55.3	21	181	09
23.00	33.6	-54.8		174	06
24.00	28.8	-53.9		152	07
25.00	24.6	-53.7			

III.2.6. Characteristics of Waves Taken from Data from the Scientific Research Ship "Akademik Korolev". /128.

On the XVIII voyage of the scientific research ship "Akademik Korolev" wave measurements were taken simultaneously with microwaves for the purpose of interpreting the latter.

The particularities of these works consist of the fact that the wavegraph measurements (wavegraph GM-62) were conducted several meters from the stern of the ship, and the microwave measurements were taken at a distance of tens and hundreds of meters from on board the ship. And the duration of the microwave measurements was approximately 10 minutes.

In conjunction with the temporary and dimensional variability of the waves, similar statistical characteristics of the waves, determined for the same 10-minute interval at different points on the sea surface, can differ slightly. The report presents characteristics of the temporary variability of the waves for the following days: September 10, 11, 13 and October 13, 25, 30.

According to the wavegraphs for these days, the energy spectra were calculated, the inaccuracy of which along the frequency axis was evaluated according to the results of the measurements of the ship's drift speed.

Table III.2.6.a presents average values of the wave heights and periods which were calculated both for the entire program and for its separate parts. The wave heights are presented here with 15% provision of the wind component, measured with a wave-measuring attachment to the radar station. The height of the swell is presented also.

As we see from table III-2-6-a, for the waves which were realized in wavegraphs 18, 52, 59, the average values of the heights and periods of the waves increase, and in 33 of them they decrease.

In other wavegraphs we observe variations of the average height at a slightly average level.

In order to explain the reasons for this variability we conducted an analysis of the wave stages with which the wavegraphs coincided.

An analysis of materials for solving this task can be conducted by synoptic and statistical methods.

Unfortunately, the synoptic maps cannot give information on the temporal variability of the wind, comensurate with the duration of the wavegraph measurements.

In this report we used the statistical method for analyzing the wave stages. As we know, the developing (fading) wind /129.
wave is considered the wind wave in which the wave heights increase (decrease) in time. Consequently, the criteria of the wave stage should be accepted as the average wave height of several subsequent wavegrams. And the processing method of the wavegrams should take into consideration the removal of the anchor.

In this experiment, the wavegraph measurements lasted approximately 30-40 minutes and included up to 400 waves, and it was believed that an uninterrupted recording of 150 waves was sufficient for computing the basic statistical parameters of the waves. Based on this, the wavegram was divided into

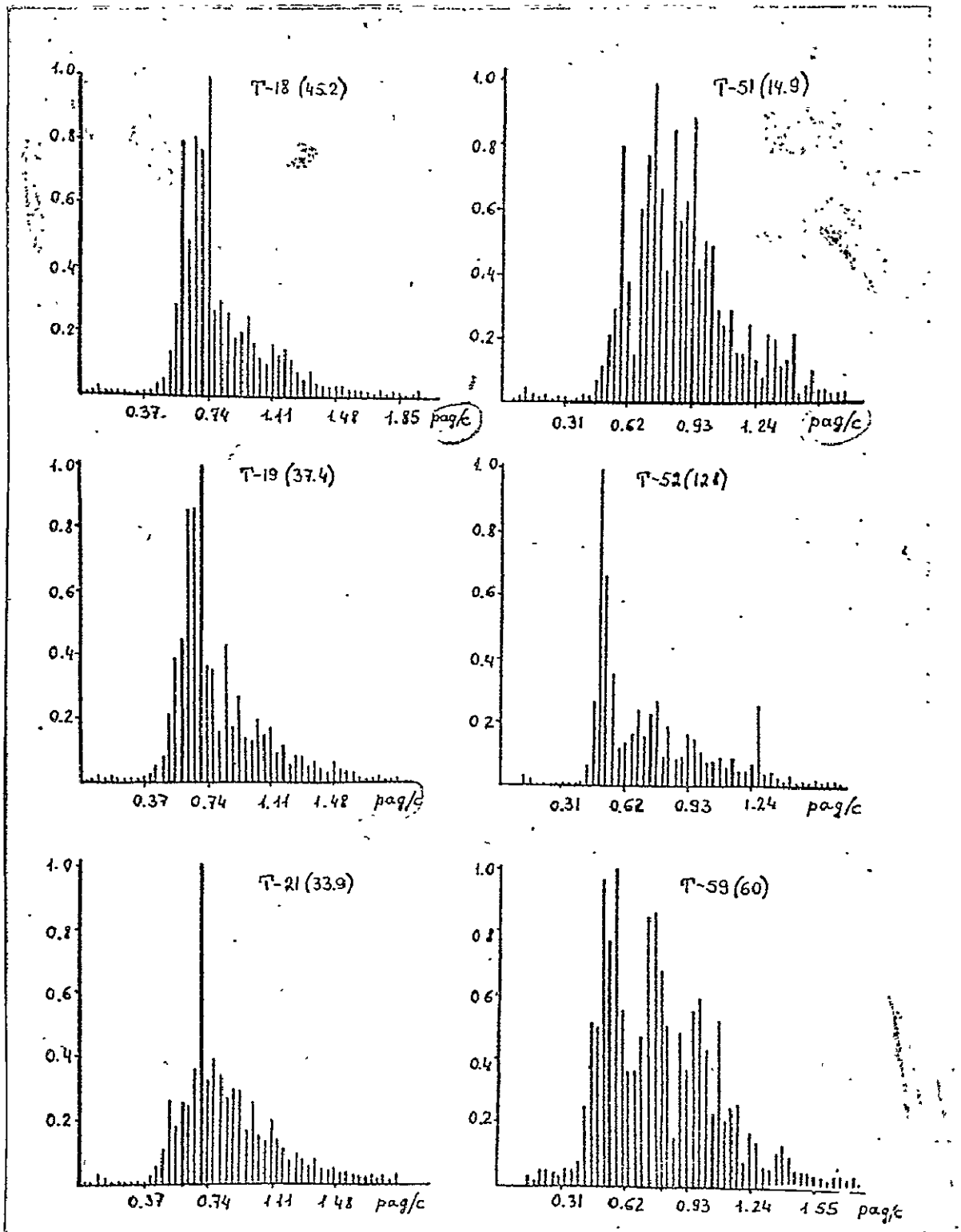

Рис.П.2-6. Энергетические спектры волнения.

Figure II.2-6. Energy spectra of the waves. /128a.

Key: 1 - rad/sec

equal sections, the average wave heights were determined for each section. In some cases the wave characteristics should not differ significantly, in others there should be noticeable differences in the average wave heights.

Thus, the computed average wave heights $\bar{h}_1$ and $\bar{h}_2$ were compares and their difference was determined Δh.

The difference obtained Δh was compared with the confidence interval, computed according to the dispersion of the wave heights. In the case of exceeding the absolute value of the difference Δh of the confidence interval, a conclusion was made that the wave was located in an undetermined sequence. With a decrease of the average wave height (difference with the negative sign) we can speak of the wave's decreasing during the wavegram measurement. With a positive difference we can talk about the development of the wave for the same period.

The results of this analysis are presented in table III-2-6b.

Conclusions on the stages of development of the wave must be considered approximate, because the value Δh can be caused by the group structure of the wave also.

We computed the energy spectra of waves. In parens, after /130. the number of the wavegram, the value of the maximum ordinate in the spectrum is given (m^2).

The border between the frequencies of the variations of the sea's own surface (swell) and the frequencies of the forced variations (wind waves) crosses approximately at a frequency of 0.8 rad/sec.

The exact determination of this border is hindered by the inaccuracies in determining the wave periods, which occur during the wavegraph measurements as a result of wavegraph drift.

Table III-2-6b

No. of the wavegrams	Δh	Confidence interval with confidence probability of 99%	Wave stage
I8	+0,27	0,24	development
20	-0,27	0,20	fading
2I	-0,I5	0,20	
22	+0,05	0,20	
33	+0,05	0,I4	
5I	+0,II	0,I5	
52	+0,58	0,25	development
59	+0,25	0,24	development

Key to foreign text page 131. /131.

1. Table III-2-6a.
2. Time Variability of the Wave Characteristics
3. Number of the wavegram
4. Date, Time GMT
5. Wave characteristics for the entire wavegram.
6. $h_{av.}$ (M)
7. $T_{av.}$ (C)
8. number of waves
9. Time of the recording GMT
10. Wave characteristics for separate parts.
11. Duration of this section (minutes)
12. h of the winds was 15 % (M)
13. h of the swell was 15% (M);
14. Note: All of the wavegrams, except 3-16, were recorded on a wavegraph GM-62 (measurements near the ship). The wavegram 3-16 was recorded by a wavegraph GM-16 at a distance of 400-600 meters from the ship to the windward direction.

Таблица III-2-69

Временная изменчивость характеристик волнения

№ волнограмм	Дата, время ГМТ	Характеристики волнения по всей волнограмме				Характеристики волнения по отдельным отрезкам														R ветров. состав. 15% (м)	R зыби 15% (м)
						I				II				III				IV			
		$h_{ср.}$ (м)	$T_{ср.}$ (с)	число волн	Время записи ГМТ	$h_{ср.}$ (м)	$T_{ср.}$ (с)	число волн	продолж. отрезка (мин)	$h_{ср.}$ (м)	$T_{ср.}$ (с)	число волн	продолж. отрезка (мин)	$h_{ср.}$ (м)	$T_{ср.}$ (с)	число волн	продолж. отрезка (мин)	$h_{ср.}$ (м)	$T_{ср.}$ (с)	число волн	продолж. отрезка (мин)		
		6	7	8	9	6	7	8	11	6	7	8	11	6	7	8	11	6	7	8	N (мин)	12	13
I8	I0 сент. 2-I0	2,I2	6,8	284	2-I0 2-42	I,92	6,2	I09	II,2	2,22	7,38	9I	II,2	2,27	6,95	84	9,5						
I9	I0 сент. 6-45	I,82	6,9	284	6-45 7-I7	I,92	7,I8	94	II,2	I,70	6,63	I0I	II,2	I,85	6,74	89	I0					I,48	
20	I0 сент. I2-56	I,47	6,3	290	I2-56 I3-27	I,57	6,63	I0I	II,2	I,32	6,02	II2	II,2	I,74	6,43	77	8,3						
2I	I0 сент. 22-00	I,57	6,5	290	22-00 22-3I	I,60	6,56	I03	II,2	I,45	6,I	III	II,2	I,7I	7,5	77	9,6					I,47	I,93
22	II сент. 0-50	I,53	5,9	227	0-50 I-I3	I,5I	5,83	II6	II,2	I,56	6,06	III	II,2									I,59	
3-I6	I3 сент. 2-30	2,85	7,5	50	2-30 2-36																		
33	I3 сент. 2-0I	0,93	5,6	270	2-02 2-26	I,00	6,04	67	6,7	0,9I	5,58	73	6,7	0,94	5,4I	75	6,7	0,86	5,42	55	5		
5I	25 окт. 3-0I	I,II	5,I4	256	3-0I 3-23	0,99	5,I7	79	6,7	I,I6	5,32	76	6,7	I,20	4,98	82	6,7	I,0I	5,0I	I9	I,6	I,I2	I,57
52	25 окт. I9-59	I,90	6,8	237	I9-59 20-26	I,63	6,24	64	6,7	I,65	6,I4	65	6,7	I,98	6,88	58	6,7	2,49	8,07	50	6,7	I,3I	2,65
59	29 окт. I9-40	2,33	7,0	230	I9-40 20-07	2,I6	6,9	59	6,7	2,26	6,64	6I	6,7	2,33	6,78	59	6,7	2,60	7,89	5I	6,7	2,54	2,48

Примечание: Все волнограммы, кроме 3-I6, записаны волнографом ГМ-62 (измерение вблизи судна).
Волнограмма 3-I6 записана волнографом ГМ-16 на расстоянии 400-600 м от судна с наветренной стороны.

III.2.7. Evaluation of the Amount of Foam on the Sea Surface /132.

The reflective and radiating ability of sea foam, because it is full of air bubbles in the microwave area, is significantly different from the properties of the tranquil marine surface. This situation raised the problem of a quantitative and qualitative evaluation of the degree to which the ocean is covered with foam during microwave measurements with its various combinations and wind speeds.

The foam cover of the sea surface in the "SAMEX-76" experiment was determined with the help of ship and aircraft measurements using photographs taken with wide angle cameras. It was also determined visually from the crow's nest of the scientific research vessel "Akademik Korolev". With a complex storm situation, in order to reduce the subjective evaluation of the one observer, there were three observers to meaure the foam.

Ship measurements of the amount of foam were conducted with the help of perspective photography at an angle of 40-50° to the horizon. The picture taking was conducted using a camera with the following technical characteristics:

- Aperture ration of the camera	1:6.3
- angle of vision, deg	102°
- focal distance of the objective, mm	70
- picture size, cm	18x18
- resolution of the objective	
in the center	30 lin/mm
from the edge	5 lin/mm
- shutter speed	1/50-1/130 sec.
- operation cycle of the shutter	2.7 sec.

Methods of photogrammetry allow us to determine the wave elements and the amount of foam on the marine surface using a perspective photograph taken from a specific height and at a specific angle to the horizon.

The principal difficulty in processing the image is the complexity and man hours per job as a result of different scales of the image on the surface of the frame and the differing accuracy of the image in different parts of the object.

To simplify the processing of perspective pictures we computed a special photogrammetric network, taking into account the variation in the picture's scale, the slope of the optical axis of the aerial camera and the height of the photo.

The scale of the picture 1/M is determined based on the ratio of the focal distance of the objective f, the height at which the picture was taken H, the angle of the picture α and the distance y.

$$\frac{1}{M} = \frac{1}{H} \left(\cos \alpha - \frac{y}{f} \sin \alpha\right) \qquad (I)$$

In conjunction with the fact that with increasing the scale behind the main horizontal of the picture, the inaccuracy of determining the length of the waves and of other elements increases, the processing of perspective photos at a dsitance of more than 15 meters from the ship did not take place. A useful area of processed sections of the sea surface in this case had a value of approximately 100 m^2.

The method for processing the photos consisted of measuring the length of the waves and the amount of foam. Measuring the length of the waves in photos was done using a photogrammetric screen and a chart of the change in the scale depending on the change in the distance from the ship (y).

At the beginning of the measurements in the photo wave crests were isolated.

Analyzing the foam in the photos was done using a template consisting of several parallel straight lines, separated from each other by a distance of 1.5 mm. An example of the processing of the frame with the foam covering of the sea surface is given in figure 1.

During the analysis, the template was placed on the photo so that the drawn lines are parallel to the main horizontal line of the picture. Then with the help of a ruler, on each of the drawn lines there is a length of a section occupied by either foam or by water. Relating the resulting distances occupied by foam to the total length of all lines, we found the desired amount of foam in a percentile relationship to the entire area.

Data on the foam area covering the sea surface in the field of visibility of the object are presented in table III-2-7a, and visual data on the characteristics of the waves and the foam are presented in table III-2-7b.

From the table we see that an evaluation of the foam on the sea surface using visual data and photographic materials are

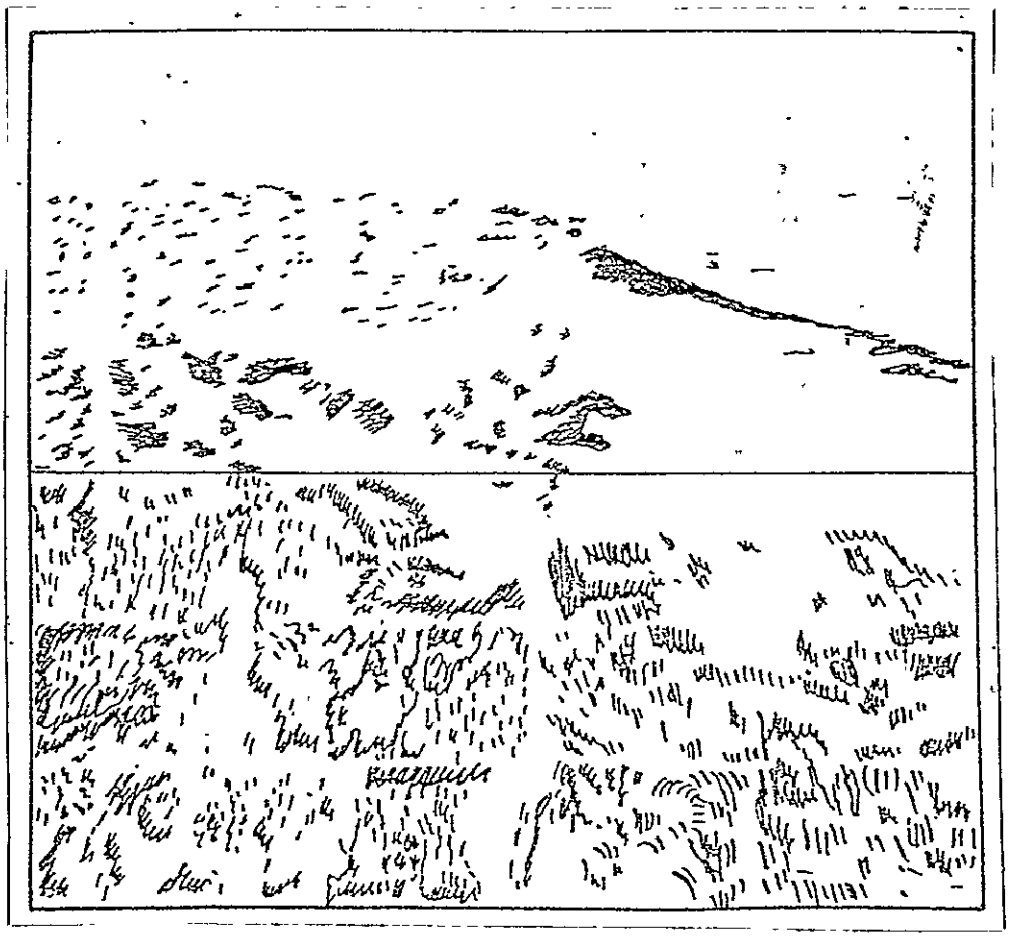

Figure 1. Foam of the crests of the sea's surface in the Pacific /134.
Ocean (50°06' north latitude, 166°00' east longitude) according to photographic data from the research vessel "Akademik Korolev". September 13, 1976.

(Frame No. 194, height - 15 meters, wind - 16 m/sec, foam covering - 38%).

significantly different from each other. Almost in all cases the visual evaluation of the foam is 2-4 times higher than that of instrumental evaluation.

Results of the Measurements. In ship conditions photographing the waves and foam takes place from the leeward side of the ship, where microwave radiometers are set up. Because of the significant dimensions of the ship (125 meters long), with /135. superstructures more than 15 meters, the latter significantly distorted the wave elements and the amount of foam. In addition, the boat itself was drifting, which further complicated the effects of the body on the waves. As the observations from the leeward side of the boat show, the smaller waves are completely distorted, smoothed out by the boat. The larger waves partially pass under the boat, are partially rebound off it and change their parameters (figure 3).

From the leeward side with weak and moderate winds and with waves, we observe a large quantity of small waves from 1-2 meters long.

With large agitation, from both the windward and the leeward sides, we observe a large amount of foam and a comparatively large quantity of small-scale waves, which form the radiothermal radiation of the water surface.

On the basis of analyses of 40 photos of the foam, one can conclude that the photos give a distorted picture of the waves around the ship's body, in relationship to both the length of the waves and the amount of foam (the height of the waves according to the photo data was not measured).

In figure 3 the results are presented of analyzing the length of the waves measured using aerial photography from the windward and leeward sides of the boat. The elements of the lengths of the waves around the ship do not exceed 3.2 meters, the most regular ones are 1-1.5 meters. The length of the waves from the leeward side are shorter.

In figure 4, one sees the results of an analysis of the amount of foam at a wind speed of 12-20 m/sec taken from meausrements on the windward and leeward sides on the boat. As the data on the observations show, the amount of foam on the leeward side because of screening by the boat is almost twice as less, and its maximum amount does not exceed 13-14%. A graphic picture of the wind and wave shadows is given by the aerialphoto of the ocean surface and of the boat taken from an IL-18.

Visual observations of the elements of the waves and of the amount of foam were conducted in an area of the sea undisturbed by the boat at sharp course angles of 30° to the left side - 0° -30° to the right side. As the observation data show, the amount of foam on the water surface increases from the wind speed in a quadratic function. As compared to the photos taken from on board the ship, the visual observations give a more objective evaluation of the amount of foam. At high wind speeds (more than 12-14 m/sec), when the sea surface is covered with readily discernible white peaks, the observers are prone to overestimate the amount of foam. This happens

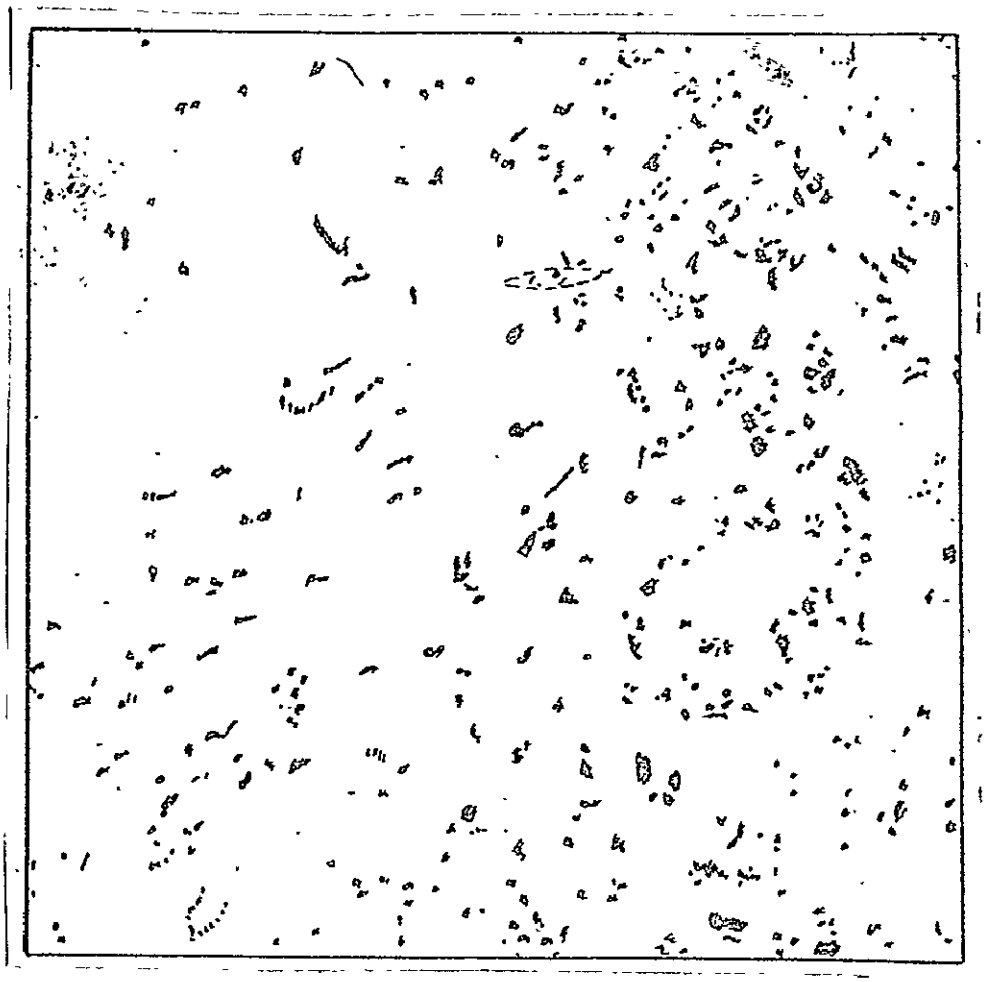

Figure 2. Foam of the crests of the sea's surface in the Pacific Ocean (50°06' north latitude, 166°00' east longitude) according to data from aerial photographs /136.

September 11, 1976.

(Frame No. 18288, plane - Il-18, height - 500 meters, Scale - 1:6000, wind - 14 m/sec, foam cover - 3.4%).

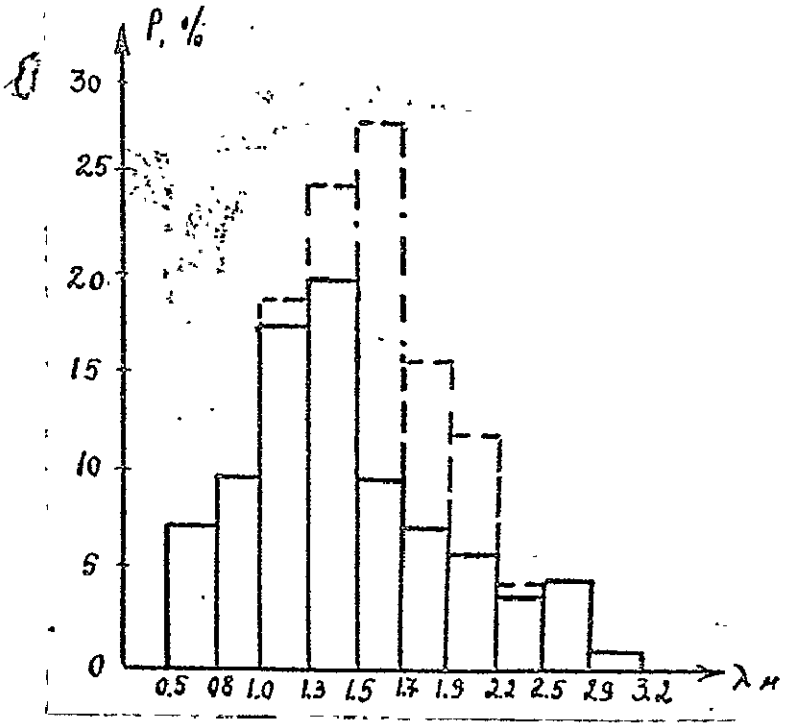

Figure 3. Distribution of the wind waves on the windward and leeward sides of the ship according to data from photos. (--- windward, ——— leeward). /137.

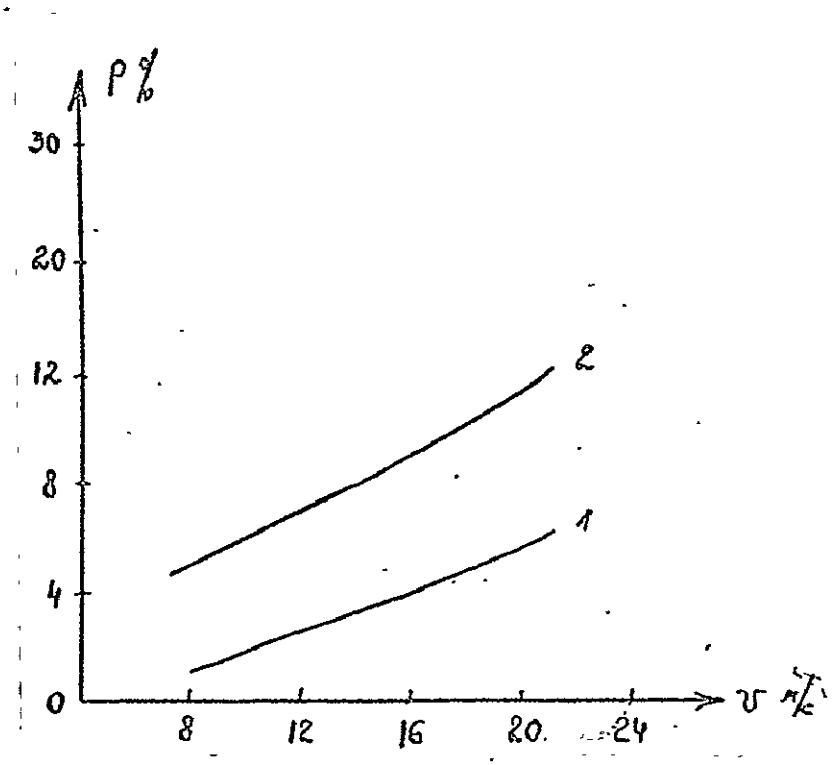

Figure 4. Dependence of the amount of foam on the wind speed on the windward (2) and the leeward sides (1).

Table III-2-7a

Data on the Sea Foam Obtained from the Photographic Materials of the Research Vessel "Akademik Korolev" in the Pacific Ocean, September 13, 1976.

No. of the photo	Time of the photo, hour, minute, GMT	No. of the Frame	Area of the picture covered by foam, mm^2	Area of the picture covered by foam %	Wind, m/sec
I.	00-30	I77	477	6,0	I8,9
2.		I78	327	4,I	I8,9
3.	00-45	I79	I86	2,3	I9,2
4.		I80	254	3,2	I9,2
5.	0I-00	I8I	I86	2,3	I9,2
6.		I82	330	4,2	I9,2
7.	02-I5	I88	300	3,8	I5,5
8.	02-30	I90	I76	2,0	I3,6
9.	02-45	I9I	440	5,6	I5,I
I0.		I92	472	6,0	I5,I
II.	03-00	I94	30I6	38,I	I6,6
I2.	05-00	I95	3I26	39,6	I2,8
			Average	9.7%	

Table III-2-7b /139.

Visual Evaluation of the Sea Waves and Foam from the Research Vessel "Akademik Korolev" in the Pacific Ocean, September 13, 1976 During Photography of the Surface.

No. of pic.	Time of photo, hour, min, GMT	No. of photos	Waves						Foam (%)		Wind (m/sec)
			Type	h (m)	t (sec)	λ (m)	D°	Balls	total Σ of the crest	strips	
I.	00-00	I73,I74	BB	5,0	8,0	70	I5	7	35	I5	20 I9,6
2.	00-I5	I75,I76	BB	5,5	8,5	70	I3	7	40	I0	30 I8,8
3.	00-30	I77,I78	BB	5,5	9,0	75	I2	7	50	I5	35 I8,9
4.	00-45	I79,I80	BB	6,0	9,0	75	I0	7	60	20	40 I9,2
5.	0I-00	I8I,I82	BB	6,0	9,0	80	I5	7	55	20	35 I9,2
6.	0I-I5	I83,I84	BB	5,0	8,0	70	20	7	40	I5	25 I9,2
7.	02-00	I85,I86	з/BB	5,5/3,0	9/4	90/40	I5/330	6	35	I5	20 I5,9
8.	02-I5	I87,I88	з/BB	5,5/3,0	9/5	90/40	20/350	5	30	I2	I8 I5,5
9.	02-30	I89,I90	з/BB	5,5/3,0	9/5	90/40	20/350	5	30	I2	I8 I3,6
I0.	02-45	I9I,I92	з/BB	4,0/3,0	9/5	80/40	20/350	5	20	8	I2 I5,I
II.	03-00	I93,I94	з/BB	4,0/3,0	9/5	80/40	20/350	5	25	I0	I5 I6,6
I2.	05-00	I95,I96	з/BB	5,0/2,5	9/5	90/30	40/340	5	I5	I0	5 I2,8

because of the effect of the perspective increase of the foam of the white caps of the waves toward the horizon. An approximate evaluation of such an overestimate is 10-15%. On the basis of the observations performed on the foam cover and on the wind speed, in figure 5 we present the dependence of the amount of foam on the wind speed. For comparison we also present the dependence of the amount of foam on the wind speed obtained in the "Bering" experiment for a small number of observations, and also the experimental data of D.B. Ross and V. Kardon (D.B. Ross, V. Kardon. Observations on the White Crests of the Waves and on the Wind in the Ocean. Geophysical Research Journal, v. 79, No. 3, 1974, USA, pp. 444-452). This dependency is approximated by the following equation:

$$P = 0.12\ V^2 \qquad (2)$$

where V is the wind speed in m/sec.

In connection with the fact that the airplane observations (aerial photographs) were conducted from high altitudes and allowed us to measure the foam only on the crests of the waves, these data do not give a complete picture of the total foam amount.

On the basis of simultaneous visual observations of the amount of foam on the crests and of its total amount, we obtain the dependence of the relationship of the foam on the crests to the total amount of foam on the wind speed. This

dependency helps us use the aerial photos from the Il-18 airplane to describe the characteristics of the total foam cover of the ocean (figure 6).

Airplane measurements were conducted from the Il-18 craft of the A.I. Voyekov Main Geophysical Observatory. The operations for determining the amount of foam were conducted using mapping aerial photography. The photos were taken using a topographical camera having the following characteristics:

aperture ratio of the camera	1:6.8
vision angle on the side of the photo	100°
diagonally	119°
focal distance of the objective, mm	75
size of the frame, cm	18x18
resolution of the objective in the center	42 lin/mm
on the edge	7 lin/mm
shutter speed	1/75-1/750
operation cycle	2 sec.

The airplane flights were conducted along specific routes coming out at the point where the research vessel "Akademik Korolev" was located.

Photographing the water surface was conducted at an altitude of 400 and 4000 meters. For processing and subsequent analysis we used materials from flights on September 11 and 13, 1976, taken at an altitude of 350-400 meters.

Photos from an altitude of 4000 meters, because of the small scale, turned out to be not so useful for measuring the foam cover and were not included in the analysis. It is important to point out that even the photos from an altitude of 400 meters do not help us obtain complete information on the foam cover on the slopes of the wind waves. A layer of water filled with air bubbles with a diameter of 0.2-0.5 to 2-3 mm is usually taken as a foam cover. And these have the most effect

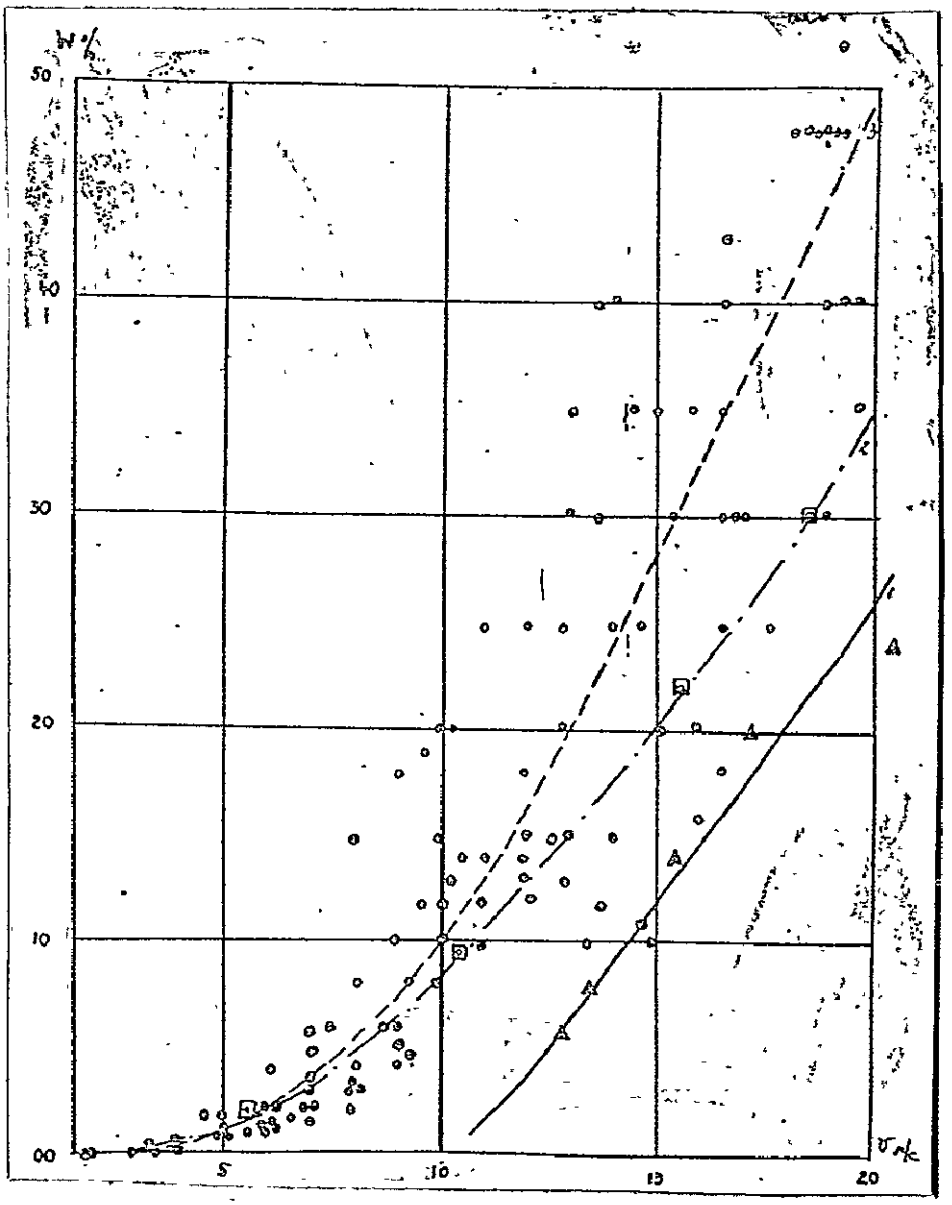

Figure 5. Dependence of the amount of foam (w%) on the wind speed (V, m/sec). Pacific Ocean, research vessel "Akademik Korolev", 1976. /141.

1. ▲ - data from the "Bering" experiment
2. ⊡ - data from D. Ross
3. ° - visual observations from the research craft "Akademik Korolev"

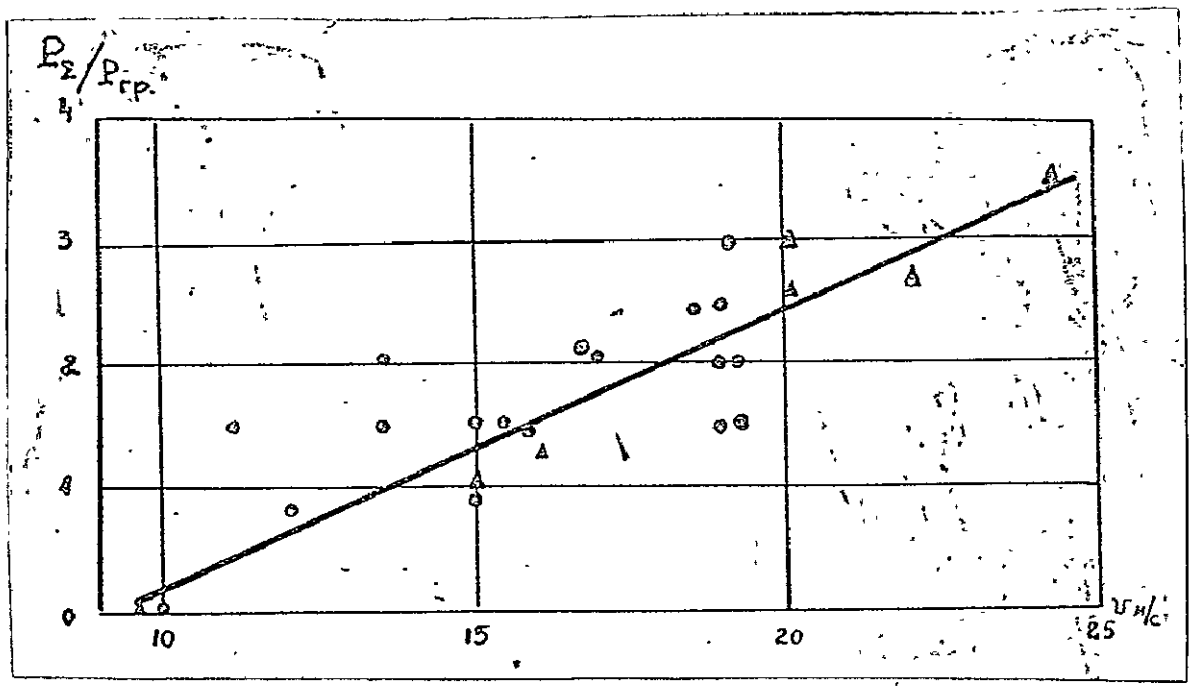

Figure 6. Relationship of the area of the foam strips of the crests (P_1) to the total area of the foam formations (P_{total}) at different wind speeds (V m/sec). /142.

I - the theoretical curve according to B. Ross and V. Kardon, 2 - the experimental data from B. Ross and V. Kardon, 3 - experimental data from the research vessel "Akademik Korolev, 1976.

— - 1
▲ - 2
● - 3

on the thermal radiowaves. To study such a foam cover it is advisable to use aerial photography equipment and choose a flight altitude which would help obtain the necessary resolution. As calculations show, the necessary scale of the picture for performing these measurements should be no less than 1:100, which is possible only on a boat, setting the camera on the bow at an altitude of 10 meters at a focal distance of 100 mm.

The aerial photos of the agitated surface taken from an Il-18 in a scale of 1:5000 give an advantageous perception of the foam on the crests of the waves and almost no information on the foam on the waves' slopes. And the basic mass of the foam with significant and strong agitation is on the waves' slopes and therefore to obtain the characteristics of the total foam content a coefficient should be introduced which depends on the relationship of the foam on the crest to the total /144.
number of foam at different wind speeds. On the basis of the dependency presented in figure 6, obtained from the research vessel "Akademik Korolev", we can make corrections on the airplane's measurements to get a picture of the total area covered by foam during the experiments. Information on the
are covered by foam in the Pacific Ocean according to photos taken from airplanes on September 11 and 13, 1976 can be obtained from table III-2-7b.

An analysis of the data in table III-2-7b, obtained on the basis of scheduled aerial photographs of the wave crests,

indicate a high degree of ocean foam cover, although the wind speed was 15/m/sec on September 11 and 20 m/sec on September 13. When introducing the coefficients according to the chart in figure 6, the total amount of foam increases to 5-11.2%.

Key to text page 163B

1. Table III-2-7b.
2. Amount of Foam on the Crests of the Wind Waves and Its Total Amount According to Data from the Scheduled Aerial Photographs from an Il-18. September 11 and 13, 1976.
3. No. of the picture
4. No. of the frame.
5. % of foam on the crests.
6. Total amount of foam.
7. No. of the picture.
8. No. of the frame.
9. % of foam on the crests.
10. Total amount of foam.
11. No. of the picture
12. No. of the frame.
13. % of foam on the crests.
14. Total amount of foam.
15. September 11
16. Total
17. September 13
18. Total

Таблица III-2-7б

Количество пены на гребнях ветровых волн и суммарное ее количество по данным плановой аэрофотосъемки с самолёта ИЛ-18 II и I3 сентября I976 г.

3	4	5	6	7	8	9	10	11	12	13	14
№№ п.п.	№ кадра	% пены греб-ней	Сумм. к-во пены	№№ п.п.	№ кадра	% пены греб-ней	Сумм. к-во пены	№№ п.п.	№ кадра	% пены греб-ней	Сумм. к-во пены
					II сентября						
I	I8284	I.7	4.3	4	I8287	3.I	7.7	7	I8290	4.5	II.2
2	I8285	3.2	8.0	5	I8288	3.4	8.5	8	I829I	3.4	8.5
3	I8286	2.8	7.0	6	I8289	3.5	9.0	9	I8292	3.7	9.2
									Суммарн.	3.2	8.2
					I3 сентября						
I	I8480	0.6	2.I	I6	I8606	I.6	5.6	3I	I8667	2.I	7.4
2	I8482	0.3	I.0	I7	I8507	2.5	8.7	32	I8560	I.3	4.5
3	I8484	0.6	2.I	I8	I8508	I.6	5.6	33	I8569	0.7	2.4
4	I8485	0.5	I.7	I9	I85II	3.0	I0.5	34	I8573	I.4	5.9
5	I8486	I.4	4.9	20	I85I2	I.7	5.9	35	I8576	I.4	4.9
6	I8487	I.3	4.5	2I	I85I3	2.6	9.I	36	I8578	0.7	2.4
7	I8489	0.8	2.8	22	I8520	2.5	8.7	37	I858I	0.5	I.7
8	I8490	0.7	2.4	23	I852I	I.7	5.9	38	I8583	I.0	3.5
9	I8492	0.7	2.4	24	I8534	I.2	4.2	39	I8587	0.6	2.I
I0	I8496	0.4	I.4	25	I8554	3.4	II.9	40	I8588	I.0	3.5
II	I8499	0.7	I.7	26	I8555	I.9	6.6	4I	I8589	I.3	4.5
I2	I8500	0.4	I.4	27	I8557	0.4	I.4	42	I8593	I.I	3.8
I3	I850I	I.4	4.9	28	I8559	0.7	2.4	43	I8608	0.7	2.4
I4	I8504	I.0	3.5	29	I8560	0.3	I.8	44	I8644	0.9	3.I
I5	I8505	I.8	6.3	30	I8562	0.8	2.8	45	I8648	I.I	3.8
									Суммарн.	1.2	4.2

Table III-2-8

Temperature and Salinity of the Surface Layer of the Water

Date	Time	Temperature of the Surface Layer	Salinity of the Water Surface ‰
I0.09.76	5.00	I0.I6	32.973
	5.45	I0.22	32.798
	II.50	I0.53	32.392
	I8.00	II.20	32.427
II.09.76	0.30	I0.94	32.903
	5.50	I0.8I	32.903
	II.55	9.80	32.956
	I7.45	9.30	32.903
	23.50	8.85	32.826
I3.09.76	0.00	8.93	32.737
	5.I5	9.08	32.684
	I2.25	8.70	32.843
	I7.48	8.27	32.790
25.I0.76	5.54	7.68	32.6I6
	II.53	8.43	32.723
	I7.5I	8.37	32.688
	23.52	9.I5	32.634
30.I0.76	0.09	7.08	33.732
	6.04	7.26	33.7I4
	II.53	9.70	33.I53
	I8.I0	II.44	33.205
	23.49	I2.93	33.328

Key to text page 166 /147.

1. Date
2. Time
3. Intensity (mm/min)
4. Total amount (mm/min)
5. Time for collecting precipitation
6. Windspeed on M-92 (m/sec)
7. Wind direction (degrees)
8. avigraph
9. left
10. right
11. pluviograph "Akademik Korolev"
12. draft gage
13. Boat course (degrees)
14. Speed of the boat (knots)
15. Special marks
16. observed
17. actual
18. M-92 GGO
19. M-92 "Akademik Korolev"
20. KIV "Akademik Korolev"

Key to text page 172 /153.

1. Note: x - left side
   xx - pluviograph GGO (right), the water flowed above the hose
   xxx - very slight drizzle
   x) - salt in the draft gage
   xx) - October 13, 14, 15 the hoses of the pluviograph GGO were changed
   xxx) - from October 20 the left pluviograph does not work
   !) - on October 24 there is no tape on the ship's pluviograph, water got in the stylus, the ink is washed out
   !!) - November 4 after 9:50 there is no registering of rain on the tape of the ship's pluviograph, the drainage mechanism did not engage.

1 Дата	2 Время	Интенсивность (мм/мин)		Суммарное к-во (мм/мин)		Интенсивность (мм/мин)	Суммарное к-во (мм)			Время сбора осадков	Скорость ветра по М-92 (м/сек)				Скорость ветра по М-92 (м/сек)				Направление ветра (град)				Курсограф		Особые отметки
		3		4		5	6				7				8								15		
		9		10		11	9		10		левый		правый		левый		правый		левый		правый		Курс судна (град)	Скорость судна (узлы)	
		левый		правый		Плювиограф "Академик Королёв"	левый		правый		набл.	ист.	набл.	ист.	набл.	ист.	набл.	ист.	набл.	ист.	набл.	ист.			
		Плювиографы ГГО					Осадкомер "Академик Королёв"				М-92 ГГО				М-92 "Академик Королёв"				КМВ "Академик Королёв"						
I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	26
I2/УШ	03.I7-03.20	0.00	0	0	0	0	0	0.I	0.I		-	-	-	-	I5.2	-	I5.2	-	90	-	90	-	90	I4.0	
I3/УШ	I5.0I-I5.05	0	0.	0	0	0	0	0.I	0.I		-	-	-	-	I5.6	-	I5.6	-	80	-	90	-	90	I4.0	
I4/УШ	II.00-II.05	0.I0	0.I0	0.50	0.50	0.02	0.I0	0	0		I3.I	-	I2.8	-	I2.0	-	I3.0	-	-	-	70	-	90	I4.0	
	I5.02-I5.06	0	0.02	0	0.I0	0.07	0.28	0	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2I.22-2I.30	0.20	0.25	I.60	2.00	0.I5	I.20	I.30	I.90		9.5	-	9.4	-	I7.0	-	I7.0	-	-	-	90	-	90	I4.0	
	22.I0-22.I5	0.02	0.02	0.I2	0.I2	0.02	0.I0	0	0.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	23.20-23.25	0.02	0.05	0.I2	0.25	0.03	0.I5	0.I0	0.I0		I5.0	-	I5.2	-	I7.0	-	I7.0	-	-	-	90	-	90	I4.0	
I6/УШ	22.20-22.25	0	0.25	0	I.25	0.02	0.I0	0.I0	0.I0		-	I0.0	-	I0.9	-	I0.I	-	I0.4	-	70	-	70	0	0	x
I7/УШ	00.45-00.50	0	0.02	0	0.I2	0	0	0.I0	0.I0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	04.45-04.50	0.07	0.05	0.37	0.25	0.03	0.I5	0	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	05.30-05.37	0.03	0.I4	0.25	I.0	0.02	0.I8	0.I0	0.I0		-	I0.I	-	I0.4	-	I0.7	-	I0.9	-	70	-	70	0	0	x
	20.23-20.25	0	0	0	0	0	0	0.I0	0.I0		9.6	-	9.6	-	9.7	-	9.3	-	60	-	60	-	90	I5.0	
	22.55-23.0I	0	0	0	0	0	0	0	0		-	-	-	9.9	-	-	-	9.0	-	60	-	60	0	0	x
20/УШ	I8.42-I8.45	0	0	0	0	0	0	0.I0	0.I0		9.2	-	9.0	-	8.4	-	8.7	-	70	-	70	-	320	I4.5	
22/УШ	00.00-00.I0	0.37	0.30	3.75	3.00	0	0	3.00	I.80		-	4.0	-	7.0	-	7.0	-	7.7	-	70	-	70	0	0	x
	04.00-04.I0	0.I0	0.I0	I.00	I.00	0.04	0.40	I.00	I.00		I0.9	-	I0.8	-	8.5	-	9.6	-	70	-	70	-	320	I4.0	
	05.I8-05.25	0	0	0	0	0	0	0	0		9.8	-	I0.5	-	8.I	-	9.6	-	60	-	60	-	320	I4.5	
	03.45-03.52	0	0	0	0	0	0	0	0		8.I	-	8.3	-	-	-	7.8	-	-	-	70	-	320	I4.5	
	09.20-09.28	0	0	0	0	0	0	0.I0	0.I0		8.0	-	8.4	-	-	-	7.8	-	-	-	60	-	320	I4.5	
	09.50-09.55	0.02	0.05	0.I2	0.25	0.02	0.I0	0.30	0.I0		7.2	-	8.0	-	-	-	7.9	-	-	-	40	-	320	I4.5	
	I7.25-I7.27	0.25	0.I7	0.50	0.35	0.I0	0.20	0.I0	0.30		7.9	-	7.9	-	-	-	6.6	-	-	-	60	-	320	I4.5	
23/УШ	04.30-04.32	0	0	0	0	0	0	0	0		7.9	-	7.2	-	-	-	6.6	-	-	-	50	-	320	I4.5	
	07.58-08.03	0	0	0	0	0	0	0.I0	0.I0		8.5	-	8.9	-	-	-	8.I	-	-	-	70	-	320	I4.5	
26/УШ	I0.30-I2.I5	0	0.0I	0	0.50	0	0	0.20	0.30		-	3.4	-	3.7	-	4.4	-	4.6	-	290	-	290	0	0	x
27/УШ	I5.00-I6.30	0.0I	-	0.75	-	0.0I	0.70	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I6.30-I7.35	0	-	0	-	0.0I	0.I0	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	xx
	I7.35-I8.20	0.02	-	0.75	-	0.0I	0.70	-	-		II.8	-	II.I	-	I0.7	-	-	-	I60	-	-	-	-	-	
	I8.20-I8.50	0.08	-	2.50	-	0.I0	3.20	-	-		II.5	-	II.8	-	I0.5	-	-	-	I60	-	-	-	290	I5.0	

I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	26
27/VIII	I9.I5-20.I5	0.0I	-	0.50	-	0.0I	0.90	-	-		II.5	-	II.7	-	I0.8	-	-	-	I60	-	-	-	290	I5.0	
	20.I5-20.25	0.06	-	0.62	-	0.II	0.I0	-	-		-	-	-	-	II.7	-	-	-	I70	-	-	-	290	I5.0	
	20.25-22.00	0.0	-	0.25	-	0.0I	0.40	2.60	8.00	I8.00-00.00	II.8	-	II.I	-	I0.2	-	-	-	I70	-	-	-	290	I5.0	
	22.00-22.40	0	-	0	-	0	0	-	-		I6.2	-	I2.9	-	I0.2	-	-	-	2I0	-	-	-	290	I5.0	
	22.40-23.45	0	-	0	-	0.0I	0.20	-	-		I6.5	-	I5.0	-	-	-	-	-	-	-	-	-	290	I5.00	
28/VIII	22.I0-22.50	0	0	0	0.30	0.0I	0.I2	-	-		-	8.0	-	5.2	-	7.4	-	7.I	-	I20	-	I20	0	0	x
	22.50-00.00	0.02	0.0I	I.25	I.00	0.0I	0.80	I.50	0.80	22.00-00.00	-	6.5	-	7.5	-	6.0	-	5.7	-	II0	-	II0	0	0	x
29/VIII	00.00-02.00	0.0I	0.0I	I.00	0.90	0.0I	I.00	-	-		-	-	-	-	-	5.3	-	5.6	-	I00	-	I00	0	0	x
	02.00-03.00	0.02	0.02	I.00	0.70	0.0I	0.6	-	-		-	-	-	-	-	-	-	-	-	-	-	-	0	0	x
	03.00-03.30	0.02	0.02	0.75	0.50	0.02	0.75	3.I0	0.70	00.00-03.30	-	-	-	-	-	-	-	-	-	-	-	-	0	0	x
	03.30-05.00	0.03	0.03	3.00	2.00	0.02	I.50	-	-		-	8.9	-	8.5	-	7.4	-	7.9	-	60	-	60	0	0	x
	05.00-06.00	0.02	0.02	I.25	I.00	0.02	0	-	-		-	I0.7	-	8.3	-	8.0	-	7.9	-	60	-	60	I50	0	
	06.00-06.40	0	0	0	0.30	0.0I	0	0	I.90	03.30-06.40	-	I0.9	-	9.3	-	8.I	-	7.0	-	60	-	60	I50	0	
3I/VIII	0I.30-0I.50	0	0	0	0	0	0	0.I0	0.I0	0I.30-0I.50	-	II.2	-	8.9	-	8.3	-	8.0	-	250	-	250	I60	0	
	02.05-02.07	0	0	0	0	0	0	0.I0	0.I0	02.05-02.07	-	II.I	-	8.6	-	9.0	-	8.0	-	250	-	250	I60	0	
2/IX	I6.30-I8.28	0	0	0	0	0	0	0	0.20	I6.30-I8.28	-	4.0	-	4.3	-	3.8	-	4.2	-	I70	-	I70	260	0	
8/IX	00.25-00.55	0	0	0	0	0	0	-	-		-	6.I	-	6.3	-	5.6	-	5.7	-	2I0	-	2I0	280	0	
	00.55-0I.I0	0	0.02	0	0.25	0.02	0.25	0.I0	0.30	00.25-0I.I0	-	-	-	-	-	-	-	-	-	-	-	-	280	0	
9/IX	07.I5-07.40	0	0	0	0	0	0	-	-		-	I0.9	-	9.2	-	7.8	-	6.3	-	2I0	-	2I0	290	0	
	07.40-09.40	0.0I	0.0I	0	0.50	0.0I	0.I0	-	-		-	I2.I	-	9.4	-	8.8	-	8.0	-	270	-	270	270	0	
	09.40-I0.40	0.0I	0.0I	0.50	0.75	0.0I	0.50	-	-		-	I2.3	-	9.8	-	9.5	-	8.2	-	270	-	270	270	0	
	I0.40-I3.00	0.0I	0.0I	0.60	I.25	0.0I	0.90	0.I0	2.00	0.00-I2.00	-	I4.0	-	II.6	-	I0.6	-	9.4	-	270	-	270	270	0	
	I3.00-I4.40	0.0I	0.02	0.75	2.00	0.0I	I.I0	-	-		-	I4.4	-	II.3	-	II.5	-	9.0	-	270	-	270	260	0	
	I4.40-I5.I0	0.0I	0.0I	0	0.25	0.0I	0.40	-	-		-	I3.I	-	II.4	-	I0.9	-	6.4	-	270	-	270	280	0	
	I5.I0-I8.40	0.0I	0.0I	I.25	2.50	0.0I	2.00	0.I0	7.50		-	I4.3	-	I2.7	-	II.9	-	6.3	-	270	-	270	280	0	
	I8.40-2I.40	0.0I	0.0I	0.50	0.50	0.0I	I.40	-	-	I2.00-2I.40	-	I8.2	-	I6.2	-	I4.9	-	I0.9	-	270	-	270	290	0	
	2I.40-23.00	0	0	0	0	0	0.40	0	0		-	I8.2	-	I6.2	-	I4.7	-	I0.9	-	270	-	270	300	0	
	23.00-0I.40	0.0I	0.0I	0.25	0.50	0.0I	0.60	0	0		-	I7.7	-	I4.5	-	I8.8	-	9.8	-	270	-	270	200	0	
I0/IX	0I.40-04.00	0	0	0	0	0.0I	0.I0	0	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I2/IX	07.30-08.I0	0	0	0	0	0.0I	0.20	-	-		-	7.6	-	5.I	-	4.8	-	5.0	-	I40	-	I40	250	0	
	08.I0-I0.35	0.0I	0.0I	I.50	I.50	0.0I	2.I0	-	-	- -	-	-	-	-	-	-	-	-	-	-	-	-	250	0	
	I0.35-II.00	0.03	0	0.75	0	0.02	0.50	-	-		-	7.5	-	6.5	-	6.0	-	6.2	-	I30	-	-	250	0	
	II.00-I3.00	0.02	0.0I	2.50	I.25	0.03	3.20	-	-		-	9.5	-	7.6	-	6.8	-	6.8	-	I30	-	-	230	-	
	I3.00-I4.00	0.02	0.02	I.00	I.50	0.02	I.20	-	-		-	II.7	-	I0.2	-	9.0	-	7.5	-	II0	-	-	I90	0	
	I4.00-I5.00	0.0I	0.02	0.88	I.37	0.02	I.20	-	-		-	I3.5	-	II.I	-	II.7	-	-	-	II0	-	-	I90	0	
	I5.00-I6.20	0.0I	0.0I	0.50	0.88	0.02	I.20	-	-		-	I4.2	-	I2.5	-	II.6	-	-	-	II0	-	-	I90	0	
	I6.20-I7.00	0.02	0.04	0.75	I.60	0.03	I.20	-	-		-	I2.0	-	I0.7	-	II.5	-	7.0	-	II0	-	-	I90	0	
	I7.00-I9.30	0.0I	0.0I	0.50	0.80	0.0I	I.20	3.60	8.00	I6.00-I8.00	-	I2.4	-	I0.9	-	I0.4	-	7.4	-	I00	-	-	I90	0	

I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	2
I2/IX	I9.30-22.30	0.0I	0.0I	0.75	0.75	0.0I	I.50	-	-		-	I8.7	-	I5.2	-	I4.0	-	I2.8	-	60	-	-	I50	0	
	22.30-00.00	0.0I	0	0.25	0	0.0I	0.90	0.20	2.50	I8.00-20.00	-	26.8	-	2I.9	-	20.0	-	I8.I	-	20	-	-	IIO	0	
I3/IX	00.00-04.00	0	0.0I	0	0.I2	0.0I	0.35	6.00	I4.00	20.00-00.00	-	-	-	-	-	20.0	-	-	-	I0	-	-	IIO	0	
I5/IX	2I.I5-2I.45	0	0.	0	0	0.0I	0.35	-	-		5.8	-	3.6	-	7.I	-	5.8	-	200	-	200	-	90	I4.0	
	2I.45-22.00	0	0.02	0	0.25	0	0	0.60	0.I0	2I.00-22.00	-	-	-	-	-	-	-	-	-	-	-	-	90	I4.0	
	22.00-22.20	0	0	0	0.	0.0I	0.I0	0.I0	0.I0	22.00-22.30	5.9	-	4.I	-	6.8	-	5.6	-	-	-	I90	-	90	I4.0	
I6/IX	22.20-02.00	0	0.0I	0	0.50	0.0I	0.I0	-	-		-	-	-	-	-	-	-	-	-	-	-	-	90	I4.0	
	04.50-05.00	0	0	0	0	0.02	0.20	-	-		-	I0.9	-	9.5	-	9.6	-	9.4	-	280	-	-	I80	0	
	05.00-06.30	0.0I	0.0I	I.I2	0.50	0.0I	I.30	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	06.30-06.50	0.02	0.03	0.37	0.05	0.0I	0.20	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	06.50-07.I5	0.0I	0.0I	0.25	0.25	0.0I	0.I5	2.I0	I.70	04.50-07.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	07.I5-I0.I0	0	0	0	0	0.0I	0.I5	-	-		I.2	-	2.9	-	3.6	-	3.8	-	-	-	250	-	90	I4.5	
I7/IX	0I.55-02.30	0.	0.	0	0	0.0I	0.20	-	-		9.6	-	8.5	-	7.9	-	8.0	-	300	-	-	-	90	I4.5	
	02.30-03.30	0.0I	0.0I	0.50	0.50	0.0I	0.25	0.20	0.50	02.00-03.30	-	-	-	-	7.2	-	-	-	330	-	-	-	90	I4.5	
I9/IX	I0.20-I4.00	0.03	0.03	6.50	6.25	0.02	5.20	2.I0	I.70	I0.20-I2.00	-	5.0	-	4.9	-	4.8	-	4.6	-	-	-	70	330	0	
	I4.00-I7.40	0.02	0.02	5.00	5.25	0.02	4.40	-	-		-	I2.I	-	I0.0	-	I0.5	-	9.6	-	-	-	360	270	0	
	I7.40-20.20	0	0	0	0	0.0I	0.70	9.I0	5.50	I2.00-2I.00	-	I7.0	-	I3.8	-	I3.6	-	6.4	-	340	-	-	70	0	
	20.20-22.20	0.0I	0	0.23	0	0.0I	I.I0	-	-		I8.6	-	I4.3	-	I4.9	-	I2.8	-	I0	-	-	-	I00	I4.0	
	22.20-00.50	0.02	0.02	3.00	3.50	0.03	4.00	I.80	0.70	2I.00-23.30	I0.4	-	9.8	-	I0.4	-	-	-	20	-	-	-	I00	I2.0	
20/IX	00.50-0I.35	0	0	0	0	0.0I	0.60	-	-		-	I0.7	-	9.5	-	-	-	-	-	-	-	-	30	0	
	0I.35-03.00	0.I2	0.0I	I.38	I.25	0.02	I.I7	3.90	I.20	23.30-00.00	-	I2.7	-	II.0	-	-	-	I0.3	-	-	-	I40	40	0	
	03.00-03.30	0	0	0	0	0.0I	0.I5	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	03.30-04.00	0.04	0.04	I.25	I.25	0.05	I.60	-	-		-	-	-	-	-	-	-	I0.6	-	-	-	I30	-	-	
20/IX	04.00-05.20	0.02	0.02	I.50	2.00	0.04	3.60	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	05.20-06.I0	0.0I	0	0.50	0	0.0I	0.I0	6.60	2.90	00.00-07.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	06.I0-07.40	0	0.0I	0	0.37	0	0	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	07.40-09.I0	0	0	0	0.	0.0I	0.30	-	-		-	-	-	-	-	-	4.5	-	-	-	I80	-	90	I3.0	
	09.I0-II.00	0.0I	0.0I	0.25	0.25	0.0I	I.I5	I.20	I.70	07.40-I2.00	-	9.2	-	4.2	-	6.8	-	-	-	280	-	-	40	0	
	II.00-I3.00	0.02	0.02	2.25	2.25	0.0I	I.25	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I3.00-I5.00	0.03	0.04	3.35	5.00	0.04	5.00	-	-		4.I	-	3.5	-	4.6	-	3.0	-	3I0	-	-	-	90	I4.0	
	I5.00-I6.00	0.02	0.02	I.50	I.50	0.0I	0.60	-	-		5.8	-	5.4	-	4.8	-	-	-	3I0	-	-	-	90	I4.0	
	I6.00-I6.50	0.02	0.0I	0.75	0.37	0.02	0.90	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I6.50-I7.30	0.05	0.06	2.00	2.62	0.03	I.30	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I7.30-I8.20	0.02	0	0.75	0	0.0I	0.70	-	-		I4.9	-	I5.I	-	I6.8	-	I6.2	-	3I0	-	-	-	90	I0.0	
	I8.20-20.I0	0.0I	0.0I	0.40	I.50	0.02	2.70	I0.30	6.80	I2.00-I9.00	I9.8	-	20.4	-	2I.6	-	20.6	-	-	-	I00	-	90	I2.0	
	20.I0-2I.I0	0.0I	0.	0.20	0	0.0I	0.I0	0.I0	0.I0	I9.00-20.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2I.I0-2I.55	0.0I	0.0I	0.37	0.50	0.02	I.I0	-	-		-	-	-	-	2I.7	-	-	-	-	-	I00	-	90	I2.0	

I	2	3	4	5	6	7	8	9	IO	II	I2	I3	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	2
2I/IX	00.50-0I.I0	0.09	0.08	I.75	I.62	0	0	-	-		-	I2.4	-	I3.0	-	-	-	II.6	-	-	-	II0	0	0	x
	0I.I0-0I.45	0.03	0.0I	I.00	0.50	0	0	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	0I.45-02.20	0.08	0.06	2.75	2.00	0	0	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	02.20-03.30	0.02	0.02	I.25	I.I2	0.04	3.00	I0.0	I.5	00.50-03.00	-	I2.4	-	I2.0	-	-	-	II.4	-	-	-	II0	0	0	x
	03.30-04.00	0.0I	0.0I	0.25	0.50	0.02	0.65	-	-		-	-	-	-	-	-	-	-	-	-	-	-	240	0	
	04.00-05.00	0.0I	0.0I	0.25	0.40	0.02	I.30	-	-		-	I4.0	-	I2.9	-	I2.8	-	II.8	-	I30	-	-	240	0	
	05.00-06.00	0.0I	0.0I	0.50	0.38	0.0I	0.80	-	-		I6.3	-	I6.4	-	I8.9	-	I8.0	-	-	-	II0	-	I00	9.0	
	06.00-07.00	0.02	0.03	I.50	I.60	0.04	2.50	-	-		I7.6	-	I9.5	-	I7.6	-	I9.I	-	-	-	I20	-	90	I3.0	
	07.00-08.00	0.0I	0.0I	0.25	0.25	0.0I	0.30	2.0	0.6	03.00-08.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23/IX	04.00-04.30	0	0	0	0	0.0I	0.30	0	0		I5.5	-	I6.9	-	I7.8	-	I6.8	-	-	-	I20	-	I00	I4.0	
	04.30-05.30	0.0I	0.0I	0.50	0.50	0.0I	0.50	0.	0		I4.8	-	I5.7	-	I6.7	-	I6.2	-	-	-	I20	-	I00	I4.0	
	05.30-06.00	0.05	0.04	I.38	I.45	0.05	I.40	2.I0	0.30	04.00-06.00	I4.6	-	I5.3	-	I7.3	-	I6.0	-	-	-	II0	-	I00	I4.5	
	06.30-07.I0	0	0	0.	0.	0	0.	0	0		I4.2	-	I5,6	-	I4.5	-	I5.5	-	-	-	II0	-	I00	I4.5	x
	I0.50-I2.00	0.0I	0.0I	0.I0	0.25	0.0I	0.30	0	0		-	-	-	-	-	-	-	-	-	-	-	-	I00	I4.5	
	I2.00-I2.30	0	0	0	0	0.0I	0.I0	0.	0.	06.00-I2.30	I3.4	-	I5.0	-	I3.8	-	I4.6	-	-	-	I20	-	I00	I4.5	
3/X	02.I5-03.30	0.02	0.03	I.50	2.60	0.02	I.40	0.I0	3.20	02.I5-03.30	I3.0	-	I3.I	-	I2.2	-	I2.8	-	2I0	-	-	-	260	I5.0	
	05.50-06.50	0.0I	0.0I	0.25	0.62	0.0I	0.30	0.30	0.70		9.5	-	9.6	-	II.0	-	I0.6	-	240	-	-	-	230	I4.0	
	06.50-09.00	0.0I	0.0I	2.00	I.75	0.02	2.40	2.30	I.20		9.2	-	9.0	-	I0.4	-	I0.4	-	270	-	270	-	270	I5.0	
	09.I0-09.20	0.05	0.05	0.50	0.50	0.02	0.20	0.I0	0.I0	06.00-09.00	7.8	-	6.5	-	7.3	-	-	-	260	-	-	-	270	I5.0	
4/X	I7.00-I7.30	0.02	0.03	0.50	0.87	0.0I	0.20	-	-		I2.4	-	I2.8	-	I3.5	-	-	-	240	-	-	-	270	I2.0	
	I7.30-I9.00	0.0I	0.0I	0.50	0.87	0.0I	0.65	0.50	I.00	I7.00-I9.00	7.4	-	7.7	-	6.0	-	-	-	320	-	-	-	270	I4.0	
	I9.00-20.30	0.02	0.02	I.50	I.75	0.02	I.45	-	-		4.7	-	4.7	-	6.0	-	-	-	270	-	270	-	270	I4.0	
	20.30-2I.I0	0	0	0	0	0.0I	0.05	2.I0	2.I0	I9.00-2I.00	6.0	-	5.9	-	-	-	5.5	-	-	-	290	-	270	I4.0	
	2I.I0-2I.40	0.02	0.02	0.75	0.62	0.03	0.80	-	-		I0.0	-	I0.8	-	-	-	II.5	-	-	-	280	-	270	I4.0	
	2I.40-22.30	0	0.0I	0	0.I0	0.0I	0.30	I.40	0.I0	2I.00-22.30	I2.6	-	I2.0	-	-	-	I2.2	-	-	-	300	-	270	I4.0	
6/X	I6.30- I7.00	0	0	0	0	0.0I	0.I0	-	-		I9.0	-	I9.4	-	I8.5	-	-	-	220	-	-	-	270	I3.5	
	I7.00-I9.00	0	0	0	0	0.0I	0.40	-	-		20.I	-	I7.0	-	I7.2	-	-	-	220	-	-	-	270	I3.5	
	I9.35-2I.00	0	0	0	0	0.0I	0.75	0.20	0.20	I6.30-2I.00	20.2	-	20.I	-	20.0	-	-	-	230	-	-	-	270	I2.5	x
I0/X	22.40-23.I0	0	0	0	0	0.0I	0.30	-	-		I7.0	-	I3.3	-	I3.8	-	-	-	I80	-	-	-	260	I4.0	
II/X	00.I0-0I.00	0	0	0	0	0.0I	0.30	0.I0	0.I0	22.40-0I.00	-	-	-	-	-	I7.2	-	-	-	I40	-	-	250	0	
	0I.00-0I.50	0	0	0	0	0.02	I.20	-	-		20.3	-	9.3	-	I5.3	-	-	-	I70	-	-	-	270	I3.5	
	0I.50-02.I0	0	0	0	0	0.0I	0.20	0.I0	I.70	0I.00-02.00	23.I	-	I0.0	-	I7.6	-	-	-	I70	-	-	-	270	I3.5	
	02.35-02.55	0	0	0	0	0.04	0.80	-	-		24.3	-	I7.9	-	20.4	-	-	-	I80	-	-	-	270	I3.0	
	02.55-03.30	0	0	0	0	0.07	2.45	0.I0	2.30	02.00-03.00	23.5	-	I6.4	-	I9.4	-	-	-	I80	-	-	-	270	I3.0	
	04.20-04.40	0	0	0	0	0.02	0.40	0.20	0.30	03.00-04.40	24.6	-	I9.5	-	I9.4	-	-	-	I90	-	-	-	290	I2.0	
	05.20-05.30	0	0	0	0	0.03	0.30	0	0.20	04.40-05.30	20.3	-	I7.6	-	I7.6	-	-	-	2I0	-	-	-	290	I2.0	

?	I	2	3	4	5	6	7	8	9	I0	II	I2	I3	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	26
	I3/X	09.50-I0.00	-	-	-	-	0.02	0.20	0.	0.	09.50-I0.00	I5.5	-	I5.8	-	-	-	I8.0	-	-	-	340	-	340	I4.0	xx)
		II.I0-II.30	-	-	-	-	0.06	I.20	I.50	9.6	II.I0-II.30	I2.8	-	I2.6	-	I3.6	-	-	-	320	-	-	-	340	I4.0	
		I5.55-I6.0I	-	-	-	-	0	0.	0.	0.	I5.55-I6.0I	-	I0.3	-	9.6	-	6.9	-	-	-	270	-	-	360	0	
	I5/X	03.50-05.20	-	-	-	-	0.02	2.00	-	-		-	I4.I	-	9.9	-	9.6	-	-	-	I35	-	-	240	0	
		05.20-06.I0	-	-	-	-	0.02	0.80	-	-		-	II.8	-	8.8	-	8.8	-	-	-	I20	-	-	250	0	
		06.I0-07.00	-	-	-	-	0.03	I.30	-	-		-	II.2	-	8.4	-	8.3	-	-	-	I05	-	-	235	0	
		07.00-08.00	-	-	-	-	0.04	2.20	-	-		-	I0.2	-	8.4	-	8.3	-	-	-	90	-	-	235	0	
		08.00-09.00	-	-	-	-	0.08	4.80	-	-		-	I0.7	-	8.I	-	8.2	-	-	-	80	-	-	220	0	
		09.00-09.25	-	-	-	-	0.06	I.40	-	-		-	I2.0	-	9.8	-	9.5	-	-	-	80	-	-	220	0	
		09.25-I0.00	-	-	-	-	0.03	I.20	-	-		I4.9	-	I3.6	-	I3.8	-	-	-	80	-	-	-	I30	8.0	
		I0.00-II.00	-	-	-	-	0.0I	0.80	-	-		I5.7	-	I4.I	-	I3.4	-	-	-	85	-	-	-	I30	8.0	
		II.00-I2.00	-	-	-	-	0.02	I.40	6.3	I6.4	03.50-I2.00	I4.I	-	-	-	I3.5	-	-	-	55	-	-	-	I45	4.0	
		I2.00-I2.30	-	-	-	-	0.02	0.70	-	-		-	I6.4	-	I3.3	-	I2.I	-	-	-	30	-	-	I50	0	
		I2.30-I2.40	-	-	-	-	0.04	0.40	-	-		-	I6.4	-	I3.2	-	I2.I	-	-	-	30	-	-	I50	0	
		I2.40-I3.I0	-	-	-	-	0.04	I.I0	-	-		-	I8.8	-	I3.4	-	I3.2	-	-	-	30	-	-	I50	0	
		I3.I0-I3.35	-	-	-	-	0.02	0.40	-	-		-	I7.6	-	I2.7	-	I2.4	-	-	-	30	-	-	I60	0	
		I4.30-I4.40	-	-	-	-	0.0I	0.I0	-	-		-	20.8	-	-	-	I5.I	-	-	-	I0	-	-	I20	0	
		I6.I0-I8.00	-	-	-	-	0.0I	0.30	-	-		-	I4.2	-	9.8	-	I0.0	-	-	-	340	-	-	II0	0	
	20/X	2I.00-22.00	-	0	-	0	0.0I	0.20	-	-		-	I8.I	-	I5.0	-	I3.8	-	-	-	I30	-	-	225	0	xxx
		22.00-22.50	-	0	-	0	0.02	0.80	-	-		-	I9.4	-	I5.5	-	I4.5	-	-	-	I30	-	-	230	0	
		22.50-23.30	-	0	-	0	0.0I	0.20	-	-		-	20.4	-	I5.7	-	I5.5	-	-	-	I30	-	-	230	0	
		23.30-24.00	-	0.02	-	0.50	0.03	I.00	2.7	0.3	2I.00-00.00	-	20.7	-	I6.2	-	-	-	I5.I	-	-	-	I20	30	0	
	2I/X	00.00-00.40	-	0.02	-	I.00	0.06	2.60	-	-		-	20.2	-	I7.3	-	-	-	I7.5	-	-	-	I20	30	0	
		00.40-0I.00	-	0.06	-	I.25	0.07	I.40	-	-		-	22.0	-	20.5	-	-	-	I8.I	-	-	-	I30	40	0	
		0I.00-0I.40	-	0.02	-	0.75	0.03	I.30	-	-		-	22.I	-	I8.7	-	-	-	I9.2	-	-	-	I30	40	0	
		0I.40-02.40	-	0	-	0	0.0I	0.30	-	-		-	I9.9	-	I7.2	-	-	-	I7.2	-	-	-	I40	50	0	
		04.00-05.00	-	0	-	0	0.0I	0.I0	6.2	0.3	00.00-05.00	-	I6.7	-	I4.0	-	-	-	I4.3	-	-	-	I40	50	0	
	24/X	09.30-I0.00	-	0.0I	-	0.I3	-	-	-	-		-	I9.9	-	I6.0	-	I5.0	-	-	-	I30	-	-	220	0	1)
		I0.00-II.00	-	0.0I	-	0.50	-	-	-	-		-	2I.0	-	I6.9	-	I6.0	-	-	-	I30	-	-	220	0	
		II.00-I2.00	-	0.0I	-	0.75	-	-	0.70	3.80	09.30-I2.00	-	I6.4	-	I3.I	-	I2.7	-	-	-	I35	-	-	235	0	
		I2.00-I3.00	-	0.0I	-	0.50	-	-	-	-		-	I7.5	-	I3.5	-	I3.2	-	-	-	I40	-	-	235	0	
		I3.00-I4.00	-	0.0I	-	I.00	-	-	-	-		-	I5.5	-	I3.5	-	I5.5	-	-	-	I40	-	-	220	0	
		I4.00-I5.00	-	0.0I	-	0.50	-	-	-	-		-	I5.9	-	I2.6	-	I2.3	-	-	-	I40	-	-	230	0	
		I5.00-I6.00	-	0.0I	-	0.75	-	-	I.00	5.00	I2.00-I5.00	-	I4.4	-	II.6	-	I0.9	-	-	-	I35	-	-	230	0	
		I6.00-I7.00	-	0.02	-	I.25	-	-	-	-		-	I3.7	-	I0.9	-	I0.4	-	-	-	I30	-	-	225	0	
		I7.00-I8.00	-	0.03	-	I.75	-	-	-	-		-	II.I	-	9.0	-	8.7	-	-	-	I40	-	-	230	0	
		I8.00-I8.30	-	0.03	-	I.00	-	-	I.90	9.80	I5.00-I8.00	-	II.3	-	9.4	-	8.9	-	-	-	I50	-	-	240	0	

I	2	3	4	5	6	7	8	9	IO	II	I2	I3	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	26
24/X	I8.30-I9.00	-	0.03	-	I.75	-	-	-	-		-	II.5	-	I0.0	-	9.5	-	-	-	I50	-	-	230	0	
	I9.00-20.00	-	0.07	-	4.25	-	-	-	-		-	9.0	-	8.5	-	7.8	-	-	-	I40	-	-	235	0	
	20.00-2I.00	-	0.04	-	2.25	-	-	4.2	9.5	I8.00-2I.00	-	8.8	-	7.9	-	7.4	-	-	-	I40	-	-	230	0	
27/X	06.I5-06.30	-	0	-	0	0.02	0.30	-	-		I3.9	-	I2.8	-	I2.5	-	-	-	220	-	-	-	240	I2.0	
	06.30-07.00	-	0.03	-	I.00	0.0I	0.40	-	-		I8.9	-	I6.3	-	I5.6	-	-	-	220	-	-	-	220	I2.0	
	07.00-07.20	-	0.0I	-	0.25	0.0I	0.I0	-	-		I8.9	-	I6.3	-	I5.6	-	-	-	220	-	-	-	220	I2.0	
	07.20-07.40	-	0.03	-	0.50	0.03	0.70	-	-		I8.7	-	I6.4	-	I5.7	-	-	-	220	-	-	-	220	I2.0	
	07.40-08.30	-	0.0I	-	0.0I	0.0I	0.I0	0.60	I.30	06.I5-08.00	I3.2	-	I2.0	-	I4.4	-	-	-	220	-	-	-	220	I2.0	
28/X	I2.40-I3.I0	-	-	-	-	0.02	0.60	-	-		-	I2.8	-	-	-	8.8	-	-	-	II0	-	-	220	0	
	I3.I0-I4.30	-	-	-	-	0.0I	0.30	-	-		-	I5.5	-	-	-	II.3	-	-	-	II0	-	-	2I0	0	
	I4.30-I5.40	-	-	-	-	0.0I	0.70	0.I0	0.90	I2.40-I5.00	-	I7.4	-	-	-	I2.9	-	-	-	II0	-	-	2I0	0	
	I5.40-I6.40	-	-	-	-	0.0I	0.20	-	-		-	I4.2	-	-	-	I9.3	-	-	-	II0	-	-	205	0	
	I6.40-I8.00	-	-	-	-	0.0I	I.I0	0.I0	I.90	I5.00-I8.00	-	I5.2	-	-	-	20.9	-	-	-	80	-	-	I90	0	
29/X	I4.I5-I4.55	-	0.03	-	I.00	0.03	I.20	-	-		-	I0.3	-	-	-	9.I	-	-	-	I90	-	-	280	0	
	I4.55-I6.00	-	0.0I	-	0.25	0.0I	0.20	0.I0	I.30	I4.I5-I6.00	-	I2.I	-	-	-	9.4	-	-	-	200	-	-	300	0	
3I/X	08.35-08.40	-	0	-	0	0.04	0.20	-	-		I5.7	-	-	-	I5.8	-	-	-	I50	-	-	-	I90	I4.0	
	08.40-I0.00	-	0.03	-	2.25	0.03	2.30	-	-		I5.5	-	-	-	I5.6	-	-	-	I50	-	-	-	I90	I4.0	
	I0.00-II.00	-	0.02	-	I.00	0.02	I.00	-	-		I5.7	-	-	-	I6.0	-	-	-	I50	-	-	-	I90	I4.0	
	II.00-II.55	-	0	-	0	0	0	-	-		-	I5.2	-	-	-	I0.6	-	-	-	I60	-	-	260	0	
	II.55-I2.20	-	0.04	-	I.00	0.05	I.20	0.I0	I.90	08.35-I2.00	-	I4.6	-	-	-	9.8	-	-	-	I50	-	-	260	0	
	I2.20-I2.50	-	0	-	0	0.03	I.00	-	-		-	I0.8	-	-	-	7.7	-	-	-	I40	-	-	250	0	
	I2.50-I3.25	-	0.02	-	0.50	0.03	I.00	-	-		-	I2.8	-	-	-	9.6	-	-	-	I40	-	-	250	0	
	I3.25-I3.40	-	0	-	0	0.02	0.30	I.30	2.60	I2.00-I3.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4/XI	04.05-05.05	-	0	-	0	0.0I	0.80	-	-		7.0	-	-	-	6.5	-	-	-	I90	-	-	-	230	I5.0	
	05.05-05.20	-	0.02	-	0.38	0.0I	0.I5	I.80	0.80	04.05-05.00	7.2	-	-	-	8.3	-	-	-	I90	-	-	-	230	I5.0	
	05.20-06.30	-	0.0I	-	0.50	0.0I	0.I0	-	-		7.5	-	-	-	7.9	-	-	-	I45	-	-	-	I80	I4.0	
	06.30-07.20	-	0.0I	-	0.I2	0.0I	0.25	0.20	0.40	05.00-07.00	9.I	-	-	-	8.8	-	-	-	I40	-	-	-	I80	I4.5	
	07.20-08.00	-	0.0I	-	0.50	0.0I	0.30	-	-		8.8	-	-	-	7.9	-	-	-	I40	-	-	-	I80	I5.0	
	08.00-09.00	-	0.II	-	6.50	0.08	4.60	I.80	5.30	07.00-09.00	8.I	-	-	-	7.6	-	-	-	I40	-	-	-	I80	I4.0	
	09.00-09.30	-	0.02	-	0.62	0.03	0.80	-	-		I2.3	-	-	-	I0.6	-	-	-	I00	-	-	-	I90	I4.0	
	09.30-09.50	-	0.I4	-	2.87	0.04	0.80	-	-		II.3	-	-	-	II.3	-	-	-	I30	-	-	-	I80	I4.5	
	09.50-I0.50	-	0.07	-	4.25	-	-	-	-		II.9	-	-	-	II.2	-	-	-	I20	-	-	-	I80	I4.0	
	I0.50-II.30	-	0.20	-	8.00	-	-	-	-		I2.4	-	-	-	II.7	-	-	-	II0	-	-	-	I80	I4.0	!!)
	II.30-II.50	-	0.04	-	0.75	-	-	-	-		6.4	-	-	-	5.3	-	-	-	I60	-	-	-	240	I4.5	
	II.50-I2.20	-	0	-	0	-	-	5.40	20.6	09.00-I2.00	5.5	-	-	-	3.7	-	-	-	I50	-	-	-	240	I4.5	
	I2.20-I3.00	-	0.03	-	I.25	-	-	-	-		9.3	-	-	-	7.I	-	-	-	I50	-	-	-	240	I5.0	
	I3.00-I3.30	-	0.02	-	0.50	-	-	-	-		9.5	-	-	-	7.8	-	-	-	I60	-	-	-	240	I5.0	

I	2	3	4	5	6	7	8	9	I0	II	I2	I4	I5	I6	I7	I8	I9	20	2I	22	23	24	25	26
4/XI	I3.30-I4.00	-	0.07	-	2.00	-	-	-	-		I0.7	-	-	-	II.7	-	-	-	I80	-	-	-	240	I5.0
	I4.00-I4.30	-	0.05	-	I.75	-	-	-	-		I0.8	-	-	-	9.9	-	-	-	I60	-	-	-	240	I5.0
	I4.30-I4.40	-	0.27	-	2.75	-	-	I.40	I0.I	I2.00-I4.40	9.7	-	-	-	9.4	-	-	-	200	-	-	-	240	I5.0
	I8.25-I9.35	-	0.0I	-	0.25	-	-	-	-		3.2	-	-	-	3.6	-	-	-	270	-	-	-	270	I5.0
	I9.35-2I.00	-	0.0I	-	0.37	-	-	I.70	0.4	I8.25-2I.00	-	-	5.3	-	-	-	4.9	-	-	-	360	-	270	I5.0
	2I.00-23.00	-	0.0I	-	0.20	-	-	-	-		-	-	II.5	-	-	-	9.7	-	-	-	360	-	270	I5.0
	23.00-00.35	-	0.0I	-	0.20	-	-	0.90	0.I	2I.00-00.00	-	-	I0.I	-	-	-	8.2	-	-	-	360	-	270	I5.0
5/XI	00.35-02.00	-	0.0I	-	0.83	-	-	-	-		-	-	9.0	-	-	-	7.4	-	-	-	360	-	260	I5.0
	02.00-03.00	-	0.0I	-	0.50	-	-	I.I0	0.4	00.00-03.00	-	-	9.8	-	-	-	8.2	-	-	-	355	-	250	I5.0
	03.00-05.00	-	0.0I	-	0.87	-	-	0.50	0.I	03.00-04.00	-	-	II.3	-	-	-	9.8	-	-	-	330	-	250	I5.0
	05.00-06.00	-	0.0I	-	0.25	0.0I	0.I0	-	-		-	-	I4.3	-	-	-	I4.0	-	-	-	350	-	270	I3.0
	06.00-07.00	-	0.0I	-	0.25	0.0I	0.45	I.00	0.0	04.00-07.00	-	-	I5.0	-	-	-	I4.5	-	-	-	345	-	270	I3.0
	07.00-08.00	-	0.0I	-	0.50	0.0I	0.20	-	-		-	-	I5.3	-	-	-	I2.7	-	-	-	340	-	240	I3.0
	08.00-09.00	-	0.0I	-	0.25	0.0I	0.30	2.00	0.2	07.00-09.00	-	-	I4.2	-	-	-	I2.2	-	-	-	340	-	240	I3.0
	09.00-I0.00	-	0	-	0	-	0.I0	-	-		-	-	I2.5	-	-	-	II.4	-	-	-	340	-	240	I3.0

ПРИМЕЧАНИЕ:
x - левый борт подветренный
xx - плювиограф ГГО (правый), затекала вода поверх шланга
xxx - очень слабая морось
x) - в осадкомере соль
xx) - I3,I4,I5/X заменялись шланги плювиографа ГГО
xxx) - с 20/x левый плювиограф не работает
!) - за 24/X ленты судового плювиографа нет, а перо попала вода, чернила размыты
!!) - 4/XI после 9 час.50 мин. нет записи дождя на ленте судового плювиографа, не сработал механизм слива.